



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

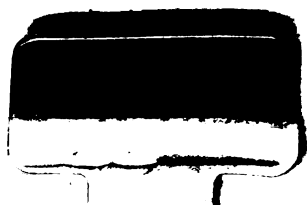
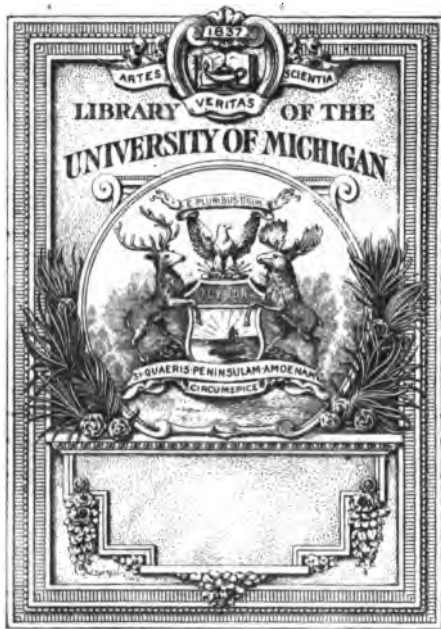
About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

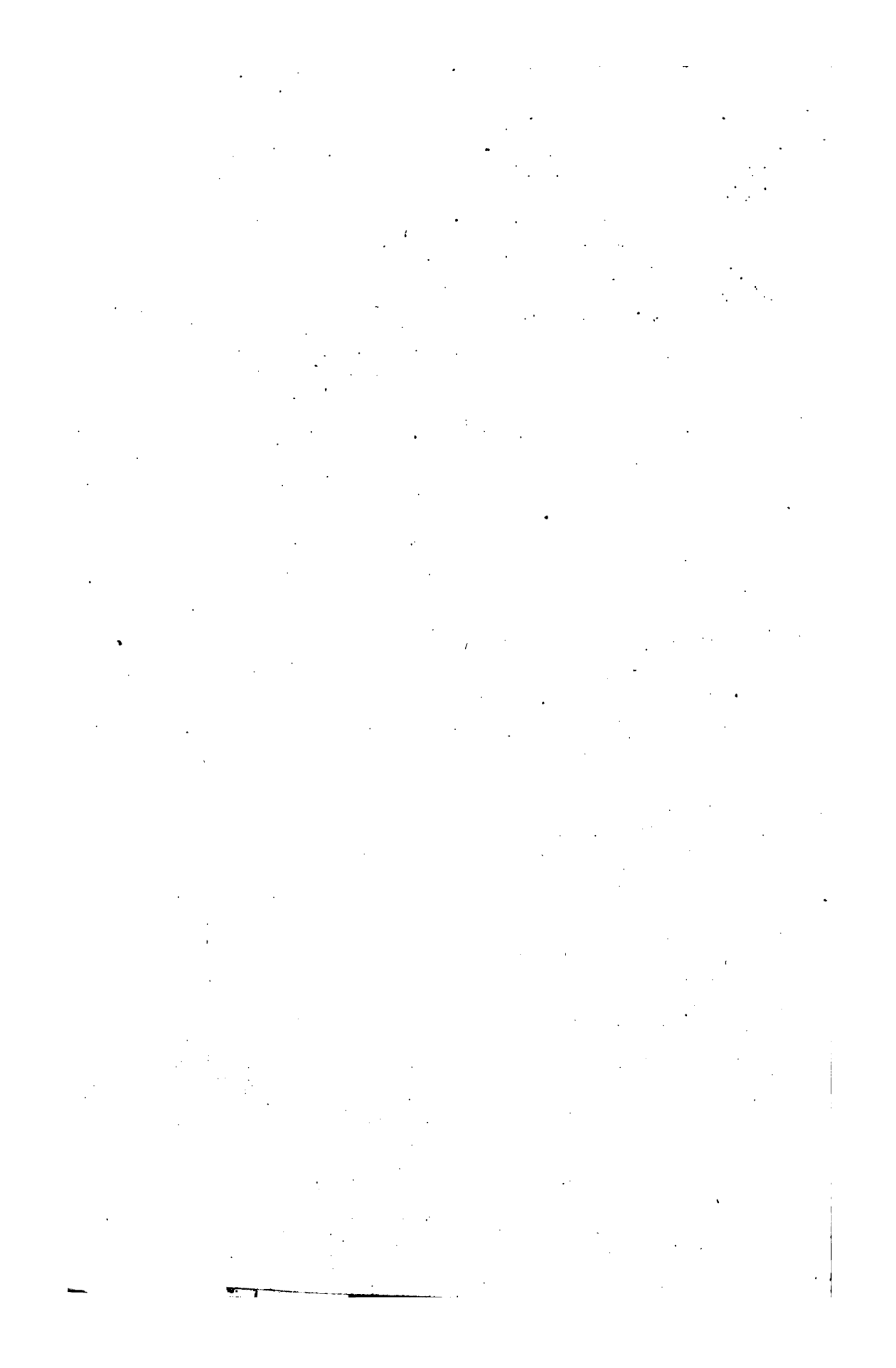
B 427870

ELEVENTH
ANNUAL REPORT
OF THE
Board of Public Works
OF THE
CITY OF CHICAGO
1871-72

Unpl x



TA
25
.C58



U.S. 100

NEW



P. B. GREENE, PHOTO.



315 West Jackson St.

CITY HALL.

ELEVENTH
ANNUAL REPORT
OF THE
BOARD OF PUBLIC WORKS,
TO THE
COMMON COUNCIL
OF
THE CITY OF CHICAGO,

FOR THE MUNICIPAL, FISCAL YEAR ENDING
MARCH 31, 1872.

D. & C. H. BLAKELY, PRINTERS AND BINDERS.
(OFFICE OF THE EVENING POST.)
1872.

BOARD OF PUBLIC WORKS.

MEMBERS OF THE BOARD.

W. H. CARTER, Commissioner and President.

REDMOND PRINDIVILLE, Commissioner and Treasurer.

J. K. THOMPSON, Commissioner.

OFFICERS.

F. H. BAILEY, Secretary.

E. S. CHESBROUGH, City Engineer.

COMMISSIONERS' REPORT.

OFFICE OF THE BOARD OF PUBLIC WORKS,
CHICAGO, July 1, 1872.

To the Common Council of the City of Chicago :

The eleventh annual report of the Board of Public Works, covering their proceedings in the various departments of city work intrusted to their care, for the fiscal year ending March 31, 1872, is herewith respectfully submitted.

The only change which has occurred in the organization of the Board in the last year, is that made by the appointment of Commissioner J. K. Thompson as successor of General McArthur, whose term of office had expired. Mr. Thompson entered upon the duties of his office February 1, 1872.

The most notable event which occurred in the past year, or which has occurred in any year in the history of Chicago, was the destruction of a large portion of the city by fire on the 8th and 9th of October last. The loss of property was greater than has ever occurred before, from the same cause, in the history of the world, amounting, according to the most reliable estimates, to two hundred millions of dollars.

The fire originated on the west side of the river, in a small stable standing on the north side of DeKoven street, east of Jefferson street, and in the rear part of the east half of Lot 12, Block 38, School Section Addition to Chicago, at about 9 o'clock on the evening of Sunday, October 8, 1871. This section of the city was built up almost entirely with wooden buildings, which the preceding dry season had made very inflammable. The fire was speedily under full headway, and, aided by a furious southwest wind which was blowing at the time,

spread in a northerly and easterly direction with wonderful rapidity, over a territory about four miles in length by an average of two-thirds of a mile in breadth, and comprising about 1,687,000 acres, and finally terminated at midnight of the second day at the extreme northeast portion of the city, having destroyed, with two or three exceptions, every building in its course. It burnt over, on an average, sixty-five acres per hour, and the average destruction of property for the same time was about seven and a half millions of dollars, or about \$125,000 per minute.

It reached the Chicago Pumping Works at three o'clock Monday morning. The buildings connected with the works were partially destroyed, and the pumping machinery so badly damaged as to stop working; thereby cutting off the supply of water and leaving the city without means for checking the progress of the fire.

When the extent and fearful progress of the fire are considered, it is a matter for wonder, as well as gratitude, that so few lives were sacrificed. So far as can be ascertained, the whole number will not exceed one hundred and fifty.

The whole city should unite in expressions of gratitude for the generous contributions which came in from all parts of the world for the relief of the distress and suffering caused by the fire. It was the most universal exhibition of benevolence, the world has ever known.

The Board desire to acknowledge, very gratefully, the generous and ready offers of assistance made to them at that time by neighboring cities, by different railroad companies, and by various other parties.

A statement is herewith given of the damage to property which belonged to the city, and which was in charge of the Board of Public Works.

CITY HALL.

The new City Hall, which had been occupied only about a year, and which cost the city about \$470,000, was entirely ruined. The walls, although left standing, were found to be in such a damaged condition as to be quite useless in the construction of a new building, and are now being taken down.

There were six vaults in the building, which were intended to be fire-proof, and were occupied, two by the Board of Public Works, one by the City Clerk, one by the Tax Commissioner, one by the City Comptroller, and one by the City Collector.

In the first four, which were composed wholly of brick, everything was preserved uninjured, while in the last two, in consequence of the giving way of the stone which was used for the floors, the contents were destroyed.

The boilers and engine connected with the heating apparatus were located in the area, under the sidewalk, and were uninjured. They will be taken out and used for heating the present temporary City Hall.

WATER WORKS.

The walls of the engine-house were but little injured; while the roof, floors and other portions were all destroyed. The water-tower was unharmed.

The machinery, which very fortunately was found to be less seriously damaged than was at first supposed, has been repaired, and is now believed to be in as good working order as before the fire.

The loss on the building and machinery is estimated at \$75,000.

The machine-shop connected with the works, including a large amount of valuable machinery, was almost a total loss. It was a substantial brick structure, 50 x 120 feet, and two stories high, and contained a machine, blacksmith and carpenter shop, and stables. It was completed and occupied in February, 1868, and cost the city, including machinery, \$25,500.

The damage to the North and South side Reservoirs is estimated at \$20,000. The wood-work was all destroyed, and the stone, brick and iron work very much injured. The use of the South Reservoir in connection with the Water Works will be discontinued.

There were some 15,000 water service pipes melted or otherwise so injured as to allow a very serious waste of water. The expense of finding and stopping these leaks will amount to \$15,000.

On account of the debris from burnt buildings which, in many cases covered the service pipes to the depth of several feet, and the

destruction of the water books showing their location, great difficulty was encountered in finding and shutting off leaks. The winter weather, which was unusually severe, also delayed the work very considerably.

Most of the fire hydrants within the burnt district will have to be repaired and reset. The cost of this work is estimated at \$10,000.

About 370 water meters were more or less damaged. The cost of repairing and resetting will amount to \$6,000.

On account of the immense waste of water through open service pipes in the burnt district, the amount of water pumped for the six months ending April 1, 1872, was larger than was ever before delivered in the corresponding period in any year. The loss on water which in this way ran to waste during this time is estimated at \$97,410.

SEWERAGE WORKS.

The damage to the Sewerage Works consists chiefly in the injury to man-hole and catch-basin covers, and in the extra expense in cleaning sewers and catch-basins, caused by deposits of lime and debris from burnt buildings. The loss in this department is estimated at \$42,000.

BRIDGES AND VIADUCTS.

The bridges across the main river at Rush, State, Clark and Wells streets, across the North Branch at Chicago avenue, and across the South Branch at Adams, Van Buren and Polk streets, were all destroyed; also the viaducts over the railway tracks at Wells and State streets. The Adams street viaduct was partially destroyed.

The damage to bridges and viaducts, including abutments, center-piers and protections, is estimated at \$204,310.

STREET PAVEMENTS.

The wooden block pavement, although considerably damaged on all streets where it was laid in the burnt district, withstood the fire much better than was expected.

The number of miles exposed to the fire was $28\frac{1}{2}$, and the esti-

mated damage was \$211,350, or an average of about 17 per cent. of its original cost.

SIDEWALKS.

The following statement shows the number of feet of each of the different kinds of walk destroyed and the estimated value thereof:

Kind of Walk.	Width.	No. of Feet.	Estimated value per ft.	Total Estimated Value.	
Wood,	4 ft.	18,250	\$.26	\$ 4,745.00	
"	6 "	286,250	.40	114,500.00	
"	8 "	6,574	.50	3,287.00	
"	10 "	8,069	.65	5,244.85	
"	12 "	13,362	.75	10,021.50	
"	14 "	200,191	.90	180,171.90	
"	16 "	59,871	1.25	74,838.75	
"	24 "	800	1.60	1,280.00	
"	25 "	6,230	1.75	10,902.50	\$404,991.50
Stone,	6 "	728	1.20	873.60	
"	10 "	3,763	10.00	37,630.00	
"	12 "	180	12.00	2,160.00	
"	14 "	22,884	14.00	320,376.00	
"	16 "	7,444	16.00	119,104.00	
"	24 "	2,123	24.00	50,952.00	531,095.60
Flag-Stone,	3 "	1,680	.45	756.00	
"	6 "	3,992	.90	3,592.80	
"	14 "	450	2.10	945.00	5,293.80
Total number of lineal feet destroyed, 642,841=121 $\frac{1}{4}$ miles.				\$941,380.90	

These walks, although mostly built at private expense, were made and given for the use of the public, and are therefore estimated among other municipal losses.

RIVER TUNNELS.

The damage to the Tunnels at Washington and La Salle streets, was chiefly on the heavy stone coping and iron fences, about the open approaches.

The estimated cost of repairing is \$6,000.

LAMP POSTS.

There were 2,162 Public Lamps and Lamp Posts more or less injured by the fire, and the cost of repairing and replacing them is estimated at \$33,000.

PUBLIC DOCKS.

The cost of repairing the injury to the river docks at the various street ends is estimated at \$6,000.

RIVER OBSTRUCTIONS.

The expense of raising and removing the sunken hulls of the Schooner "Eclipse," the Barque "Valletta," and the Schooner "Glenbeulah," together with several scow boats, all of which had been abandoned by their owners, and which had to be removed from the river at public expense, was \$7,300.

RECORDS, MAPS, Etc.

The records, maps, etc., in the offices of the Board, were very full and complete, and a great deal of inconvenience is caused by their loss. The records of the pumping works, and many very valuable books, papers, statistics, etc., scattered through the various offices of the Board, were lost and can never be restored. Fortunately, the means are at hand for reproducing most of the maps, but it will be a long and expensive work.

The following is a list in detail of the principal losses under this head:

Two sets of Atlases (original and duplicate) showing every lot, block and parcel of land in the city, with the dimensions and proper description of each; also, showing the location and width of every street, alley or public way. The duplicate set had but just been completed, and was designed to take the place of the original, which, from constant use for several years, had become very much worn.

A set of water maps, showing the location and size of all the water mains, with their connections, stop-cocks, etc.

A set of sewerage maps, showing the size, kind and location of all the sewers, with their junctions, man-holes and catch-basins. In addition to this, these maps showed the exact location of every private drain and catch-basin which had been constructed.

A set of house-numbering maps, on which was designated the proper number for every building lot in the city.

A lamp-post map, on which was shown the exact location of every public lamp.

A set of maps, on which were shown all the various street and alley openings and widenings, which had ever been undertaken by the city, together with the proceedings in each case.

A set of plats showing the river survey, which was made under the direction of the Board in 1866, 1867 and 1868.

Among the many valuable books, papers and statistics which were lost in the City Engineer's Office, was the drawing showing all the details of the construction of the Lake Tunnel. This drawing had been made with great care and accuracy, and was considered very valuable as a record of one of the most important works ever undertaken by the city. It was the same that was sent by the city to the Paris Exposition in 1867, and for which a prize medal was awarded. In the Superintendent's Office, were lost a number of sets of engineering instruments and many very valuable books and papers concerning grades, surveys, estimates, etc., together with a large number of plans of bridges and public buildings.

In the Assessment Office, duplicates of all the assessments, which had ever been made by the Board, together with over 1,500 plats on which the various assessments for street improvements and lamp-posts were shown. All the vouchers, and many other valuable papers and statistics connected with the Special Assessment Department, were also destroyed.

In the Water Office, all the water warrants and other books and papers connected with this department, excepting a portion of the plat books, were lost.

All of the various blanks and forms which were used by the Board in the different departments were lost. Through the courtesy of parties in other cities, in returning blanks which had been sent to them from time to time by the Board, many of the important ones have been restored the same as before. Others which could not be obtained in this way have been prepared anew.

As before stated, the contents of the vaults, consisting of the records of the Board, contracts, books of account, vouchers, etc., were saved.

SUMMARY OF ESTIMATED MUNICIPAL LOSSES.

City Hall and Furniture,	\$470,000.00
------------------------------------	--------------

WATER WORKS.

Engine House and Machinery,	\$ 75,000.00
Machine Shop and Machinery,	25,500.00
Reservoirs,	20,000.00
Stopping leaks,	15,000.00
Repairing Fire Hydrants,	10,000.00
Repairing damage to Meters,	6,000.00
Loss in pumping Waste Water,	97,410.00
	<u>\$248,910.00</u>
Damage to Sewerage Works,	42,000.00
Loss on Bridges and Viaducts,	204,310.00
Damage to Street Pavements,	211,350.00
“ “ Sidewalks,	941,380.90
“ “ River Tunnels,	6,000.00
“ “ Lamp Posts,	33,000.90
“ “ Public Docks,	6,000.00
Cost of removing burnt Hulls from the River,	7,300.00
Loss on Records, Maps, etc.,	50,000.00

Total estimated loss on City property, in charge of Board of Public Works,	\$2,220,250.90
---	----------------

To this may be added other municipal losses, reported as follows:

By the Mayor, City Comptroller, City Clerk, City Collector, and Law Department, of Books, etc.,	\$15,000.00
By the Board of Police and Fire Commissioners,	180,826.00
“ “ Education,	249,780.00
“ “ Health,	15,000.00
	<u>\$2,680,856.90</u>
Total estimated City losses,	\$2,680,856.90

A map showing the burnt district is hereto appended.

The Board pursue the usual order in their review of the various departments of public work intrusted to their care.

10

A
reco
wer

City

Engin
Mach
Reser
Stopp
Repai
Repai
Loss i

Dama
Loss o
Dama

"

"

"

"

Cost of
Loss or

To

To
ported

By the
and

By the

"

"

Total est

A ma

The
departm

WATER WORKS.

No new work of any considerable importance has been commenced in the past year. The operations of the Board during this time have been confined chiefly to forwarding work already commenced, and in repairing damages caused by the fire.

TUNNELS.

The injunction suit, which stayed the commencement of the new lake tunnel for a period of eighteen months, has recently been decided in favor of the city. The work is now under contract with Messrs. Steel & McMahon, and will be commenced forthwith. The time fixed for its completion is July 1st, 1874.

A copy of the contract and specifications, in which a detailed description of the work is given, is hereto appended.

The condition of the present lake tunnel seems to be unchanged. The flow of water through it has been uninterrupted since it was first put in use in 1867, excepting for a period of eight days in October last, while the engines were disabled. The water has been uniformly pure and good.

When the Lake Crib, at the eastern terminus of the tunnel, was constructed, it was the design to remove as soon as possible the temporary lighthouse and all the wood-work above the surface of the water, and to construct in place thereof a substantial and permanent structure of stone, brick and iron.

As the temporary building appeared to be quite secure and there seemed to be no immediate cause for its removal, it has been allowed to remain to the present time. A late examination, however, into its condition shows that the exposed portions above the water line are commencing to decay, and that as a matter of safety the permanent structure, as originally designed, should be commenced at once.

The Board recently prepared plans and specifications for the proposed building, and received bids for its construction. Upon computing these bids, the cost of the building was found to exceed the amount which the Board thought proper to expend upon it; accordingly the plans have been somewhat modified with a view to reduce the cost, and proposals will again be solicited.

BUILDINGS.

The damage by fire to the Engine House has been repaired in a temporary manner. The Board have additions and improvements upon the building under way which are designed to make it as secure as possible against fire. A new iron roof is now in course of construction by the "Philadelphia Architectural Iron Company," which is to be completed September 15, 1872.

In order to increase the security of the Water Works against fire, the city should prohibit, by ordinance, all business in the neighborhood deemed hazardous on account of fire.

The Machine Shop has been reconstructed upon the old foundations, and of the same dimensions as before, and has been supplied with new tools and machinery.

ENGINES.

As soon as practicable after the fire, the work of repairs upon the Engines was commenced and hurried forward with all possible dispatch.

The Engine of 1867	was repaired and put in operation	Oct. 17
" " " 1857	" " " " " "	Nov. 10
" " " 1853	" " " " " "	" 30

On account of unavoidable delays, occasioned in part by the fire, the new engine is not yet fully completed. The different parts are now, however, nearly all in place. The work that remains to be done is chiefly upon the boilers and the water and steam connections.

WATER SUPPLY.

In consequence of the increase in the consumption of water, and the great waste through service pipes opened or injured by fire, the head of water has not been as strong at all times as is desirable. It is hoped, however, that as soon as the new engine is got in operation, all cause of complaint of an insufficient supply will be removed.

During the time the engines were disabled, a partial supply of water was furnished in some sections of the city by pumping into the pipes from the river at different points, and by making connections with Mr. Shufeldt's artesian well near the intersection of Western and Chicago avenues; also with the wells at Wahl's glue factory, at the North-Western Distillery, and at Lincoln Park.

Many of the inhabitants living in the vicinity of Union and Jefferson Parks obtained their supply from the artificial lakes in these parks. The water obtained in this way prevented to considerable extent the distress that would have otherwise resulted from the stoppage of the Water Works.

The pumping records having been destroyed, the exact quantity of water delivered for the year cannot be given, but it is estimated at 8,423,890,966 gallons, being an increase of 479,206,126 gallons over that in 1870 and 1871.

WATER PIPES.

In consequence of the insufficiency of funds provided for water-pipe extension, the Board have been unable to meet the demand for water in many streets which are not yet supplied, and where the revenue would be more than enough to pay the interest on the cost. The amount of pipe laid in the past year is considerably less than that laid in any year since 1866.

The following is a statement of the quantity and cost of pipes laid in each year since 1861:

YEAR.	NO. OF FEET.	COST.
1861,	13,761	\$12,008.00
1862,	50,881	39,197.00
Amount carried forward,		\$51,205.00

	Amount brought forward,	\$51,205.00
1863,	68,691	75,241.00
1864,	62,657	104,828.00
1865,	73,494	146,332.23
1866,	60,550	121,589.23
1867,	128,519	246,420.53
1868,	161,083	266,961.35
1869,	167,504	*514,652.54
1870,	180,727	*508,855.52
1871,	91,129	316,165.19
<hr/>		
Total,	1,058,996=200 miles and 2,996 feet.	
Add, laid prior to 1861,	87	585
<hr/>		
Total to April 1, 1872,	287	3,581

The pipes laid during the past year were purchased as follows:

Of David M. Ford, of Chicago,	1,305 ¹³⁴⁹ / ₂₀₀₀	tons.
D. M. Ford Manufacturing Co., of Chicago,	1,406 ⁴⁷⁷ / ₂₀₀₀	"
Gaylord & Co., of Cincinnati,	204 ¹³⁰⁶ / ₂₀₀₀	"
Phoenix Iron Works,	10 ⁸⁰⁰ / ₂₀₀₀	"
William Smith, of Pittsburgh,	5 ¹¹⁶¹ / ₂₀₀₀	"
Smith & Co., of Cleveland,	15 ¹²³⁹ / ₂₀₀₀	"
Dennis Long, of Louisville,	205 ¹¹²⁴ / ₂₀₀₀	"

FIRE HYDRANTS.

For the year ending March 31, 1872, new fire hydrants have been erected as follows:

North Division,	46
South Division,	21
West Division,	48
<hr/>	
Erected prior to March 31, 1871,	115
	1,552
<hr/>	
Whole number of Fire Hydrants,	1,667

* NOTE.—These amounts include the amount expended in the construction of five river tunnels for the accommodation of the water mains.

DRINKING HYDRANTS.

The propriety of establishing numerous public drinking fountains, both for man and beast, throughout the thickly settled portions of the city is very apparent.

The Board believe that, in every half mile on all of the principal thoroughfares, and at longer intervals on the less frequented streets, one at least of these drinking places should be established.

A larger appropriation than has heretofore been made, should be devoted by the city to their construction and maintenance. The few that have already been established prove a great convenience to the public.

TAPPING OF WATER PIPES.

The following statement of the number of water taps used in making service pipe connections in the past year, is made up from such data as was preserved in the water department and may not be entirely correct:

No. of $\frac{1}{2}$ -inch taps inserted,	. . . . .	1,575
No. of $\frac{3}{8}$ -inch taps inserted,	. . . . .	1,410
No. of $\frac{1}{4}$ -inch taps inserted,	. . . . .	123
No. of 1-inch taps inserted,	. . . . .	79
Total,		<u>3,187</u>

WATER-RATE COLLECTIONS.

The entire receipts from all water assessments and taxes during the year, amounted to \$445,834.64, being a decrease, in consequence of the fire, from the receipts of the previous year of \$93,345.55.

The Total income of the Water Works from Feb.

15, 1854, (the day when the water was first introduced into buildings,) to Jan. 1, 1862,	\$744,244.19
Income for fifteen months, ending April 1, 1863,	189,294.80
Income for year ending April 1, 1864,	192,246.39
Income for year ending April 1, 1865,	224,902.57
Income for year ending April 1, 1866,	253,114.49
Income for year ending April 1, 1867,	302,017.59
Income for year ending April 1, 1868,	338,929.28
Income for year ending April 1, 1869,	420,686.94
Income for year ending April 1, 1870,	476,968.24
Income for year ending April 1, 1871,	539,180.19
Income for year ending April 1, 1872,	445,834.64

Total income to April 1, 1872,	\$4,127,419.32
--------------------------------	----------------

WATER METERS.

The most equitable method of assessing water rates, is by the actual quantity consumed, as determined by meter measurement. Through carelessness or otherwise, a very large amount of water is wasted which would be detected by the use of meters, and in most cases stopped. A considerable saving to the pumping department would be made in this way each year.

Most of the meters now in use here are of the Worthington Patent, although several of the Gem meters, manufactured in New York, and the Ball and Fitz meters, manufactured in Worcester, Mass., have been undergoing a test here for a year or more, and prove quite satisfactory.

No. of meters in use at the time of the fire,	656
No. injured,	367
No. repaired and put in use since,	52
	<hr/>
No. in use April 1, 1872,	= 341

CONDENSED STATEMENT OF RECEIPTS AND EXPENDITURES.

RECEIPTS.

Income from Water Rates,	\$445,834.64
------------------------------------	--------------

EXPENDITURES.

Salaries of Board and Officers, Office Rent and Expenses, and all Salaries and Expenses pertaining to the Water Office, and the assessment and collection of Water Rates,	\$37,645.58	
Expenses at Pumping Works,	98,326.06	
Repairs of Pipes, Hydrants, etc., and Miscellaneous Operating Expenses,	49,152.44	
Lake Tunnel, use of Tugs, etc.,	1,095.20	
Water Meters, Repairs, and Operating Expenses,	6,442.78	
Cost of Operating Shops,	2,834.09	
Temporary supply of Water at the time of the fire,	5,321.25	
On account of damage by fire,	70,793.42	
July Interest,	*165,273.86	436,884.68
		<hr/>
Surplus Revenue,		\$8,949.96

COST OF ADDITIONS TO THE WORKS DURING THE YEAR.

17 ¹³⁶⁹ ₅₂₈₀ miles of 4, 6, 8, 12, 16, 24, and 36 inch water mains as laid, \$316,165.19	
New Engine and sundry miscellaneous expenses connected therewith,	95,811.82
New Lake Tunnel and Crib,	14,911.94
Fence at Water Works,	5,830.34
	<hr/>
	\$432,719.29

* NOTE.—The January interest was paid by funds appropriated by the State.

COST OF WORKS TO APRIL 1, 1872.

The total cost of the Water Works, including all expenditures on work in progress to April 1, 1872, amounts to \$4,712,615.18.

MEANS BY WHICH THE WORKS HAVE BEEN PAID FOR.

Water Loan Bonds, 6 per cent.,	\$1,030,000.00	
Water Loan Bonds, 7 per cent.,	3,790,000.00	
	<hr/>	4,820,000.00
Less discount,	\$66,380.95	
Cash on hand,	887,136.93	953,517.88
	<hr/>	<hr/>
		\$3,866,482.12
Amount of one mill tax of 1871,		289,746.47
Balance from Water Rents,		556,386.59
		<hr/>
		\$4,712,615.18

SEWERAGE WORKS.

The progress of the work in this department has been very much retarded for want of the necessary funds. The Board have expended all the money which was raised by taxation last year for the construction of sewers; the amount, however, has been only sufficient to lay a small proportion of such sewers as have been petitioned for, and such as seem to them to be quite necessary.

As will be seen by reference to the annexed table, the extent of sewers laid the last year falls considerably short of that put down in each of several preceding years.

Table showing the amount of work accomplished in the Sewerage Department in each year since it has been in charge of the Board, added to the amount done May 6, 1861, the time when the work was put in their care:

DATE.		No. of feet of Sewers laid	No. of Catch Ba- sins con- structed.	No. of Man-holes constr'ed.	No. of Private Drains laid.	Cost of cleaning Sewers and Catch Basins.	Total cost of con- structing Sewers.
1861	May 6	283,586	1,174	2,102	2,194	\$5,619.48	\$665,188.46
1862	Jan. 1	2,826	18	33	243	5,474.03	3,617.31
1863	Apr. 1	15,676	72	66	365	4,793.35	57,264.51
1864	" 1	39,605	232	204	536	5,123.39	169,299.29
1865	" 1	25,021	188	183	512	9,364.68	87,221.48
1866	" 1	29,948	223	168	1,288	13,818.07	137,643.02
1867	" 1	48,127	327	271	3,722	28,445.16	225,564.53
1868	" 1	89,661	418	555	3,703	26,540.81	416,730.51
1869	" 1	47,841	480	293	3,261	26,954.06	197,152.92
1870	" 1	139,705	771	928	3,979	26,015.18	654,141.26
1871	" 1	78,166	626	468	5,187	21,464.30	258,664.70
1872	" 1	50,741	277	500	3,093	17,415.46	123,898.92
		850,903 or 161 ⁸²³ / ₅₂₈₀ Miles	4,806	5,571	28,083	\$191,027.97	\$2,996,386.91

SEWERAGE REPAIRS.

The cost of repairs of sewers and catch basins, and of the renewal and repairs of man-hole covers, during the year, is \$10,864.69.

PRIVATE DRAINS CONNECTING WITH PUBLIC SEWERS.

The Board issue permits in each case for constructing drains, and exercise a supervision over all the work, whether done by private parties or by the city.

The number laid in each of the divisions of the city is as follows:

North Division,	604
South Division,	857
West Division,	1,632
Total,	3,093

The amount received for private drain permits for the year ending April 1, 1872, is \$6,584.85.

It should be stated, that of the 3,093 drains constructed, 1,251 have been laid by private parties and 1,842 by the city, for which assessments are yet to be made. The permit fees are not paid until the assessments are collected, and for this reason the receipts are much less than usual.

SEWERAGE EXPENSES, REPAIRS, AND INTEREST.

July Interest on Sewerage Loan Bonds,	*\$93,414.01
Salaries, Office Rent, and Office and Miscellaneous Expenses,	20,487.45
Repairs of Sewers,	10,864.69
Cleaning of Sewers,	17,415.46
Raising Man-holes and Catch Basins to grade,	21,616.79
Paid on account of damages by fire,	3,464.68
Total cost for the year,	\$167,263.08

* NOTE.—The January Interest was paid out of money appropriated by the State.

SEWERAGE LOAN BONDS.

Six per cent. Bonds outstanding March 31, 1872, . . .	\$, 87,000.00
Seven per cent. Bonds outstanding March 31, 1872, . . .	<u>2,593,000.00</u>
Total amount of Sewerage Bonds outstanding March 31, 1872,	\$2,680,000.00

SEWERAGE SINKING FUND.

Amount of money in the hands of the City Treasurer March 31,
1872, and not yet applied to canceling bonds, \$10,455.43.

DEEPENING THE ILLINOIS AND MICHIGAN CANAL.

At the date of the last Annual Report of the Board, the work of deepening the Canal had just been completed. The event was the occasion of much public rejoicing.

The time that has since elapsed has fully proved that the objects sought in this great work have been fully accomplished.

The constant flow from the lake through the river and canal has kept the water comparatively clear and quite free from all objectionable odors.

The disposition of the filthy accumulations in the river, caused in part by sewerage deposits, had become a subject of very serious moment, and it is a matter of congratulation to the citizens of Chicago that this great obstacle to the growth and prosperity of the city has at last been overcome.

The total amount expended by the city on the Canal deepening is \$3,300,883.71.

The act of the Legislature, under which this work was done, gave the city a lien upon the Canal for \$2,500,000 and interest, and provided for its payment out of the earnings of the Canal.

For the purpose of relieving this lien, the Legislature passed an order, on the 20th of October last, appropriating \$2,955,340, with interest until paid; with the provision that not less than one-fifth nor more than one-third of said sum should be applied by the city in reconstructing the bridges and public buildings and structures destroyed by fire, and the remainder to be applied to the payment of the interest on the Bonded Debt of the city and the maintenance of the Fire and Police Department.

Out of the above appropriation the Board have received—

For interest on Water Bonds,	\$155,613.38
“ “ “ Sewerage and River Improvement Bonds,	184,048.74
“ construction of Bridges,	55,000.00
Total,	<u>\$394,662.12</u>

During the Summer and Fall of 1871, a large ditch was excavated, by the owners of the ground through which it was made, commencing on the Des Plaines River, near the town of Summit, and running in a northeasterly direction to intersect with the West branch of the South branch of the Chicago River. From the point where it commences to the Chicago River there is a fall of about seven feet, which is sufficient in times of high water to cause a very rapid current.

On account of the alluvial character of the soil and the rapid descent in the grade, the Board feel very apprehensive that in times of heavy rains or freshets there would be large quantities of earth brought down with the current and deposited in the river, filling up the channel and entailing great expense on the city in dredging.

Another evil consequence which is feared by the Board is, that the whole volume of water coming down from the Des Plaines river through this channel, would turn through the Illinois and Michigan Canal, and diminish to a considerable extent the current in our river and impair very seriously the usefulness of the Canal outlet.

The Board believe the construction of this ditch to be an infringement upon the rights of the city, and that some means should be adopted to avert the evil consequences.

CLEANSING THE NORTH BRANCH.

The water in the North Branch remains for the most part in a filthy and unwholesome state, and there is great necessity that something be done to improve its condition as soon as possible.

It was never expected that the beneficial effects of the Canal deepening would be very perceptible in this portion of the river; however, some slight change for the better has resulted for some distance above its junction with the South Branch. The plan suggested by the Board, in previous reports, for purifying this portion of the river, is still believed to be the cheapest and most effectual way of accomplishing that object.

CHICAGO HARBOR.

No more dredging than was absolutely necessary to maintain a sufficient depth of water for navigable purposes has been done in the harbor in the past year. The amount expended in this way is \$17,654.09.

The following sums have been paid for widening and straightening the river out of appropriations made by the Council for that purpose :

At Polk street,	\$15,795.00
At Twenty-second street,	7,584.47
At Adams street,	2,843.99
Total,	<hr/> \$26,223.46

There are still numerous places along the river which need widening and straightening, and a liberal appropriation for this purpose should be made each year. The importance of furnishing ample accommodations in our harbor for the large and increasing commerce of the Lakes cannot be overestimated.

RIVER TUNNELS AT WASHINGTON AND LA SALLE STREETS.

As a sure and speedy means of passing from one division of the city to another, the tunnels are more desirable than the bridges, as is attested by the constant throng of travel passing through them.

From the time of the fire until the first of January, the La Salle Street Tunnel was the only means of communication between the North and South Divisions of the city, and its value was fully appreciated at that time by those who had occasion to cross the main river. The small houses at the footway entrances to this tunnel are under contract, but are not yet completed.

The tunnels are both in very good condition, excepting such repairs of damages by fire as are yet to be made.

The river portion of the roadway of the Washington Street Tunnel has been repaved in the last year.

The original cost of the Washington Street Tunnel was \$517,000.

The cost of maintaining for the year, including engineer, fuel, repairs and cleaning, is \$3,851.85.

The original cost of the La Salle Street Tunnel was \$566,276.48.

The cost of maintaining for the nine months ending April 1, 1872, including engineer, fuel and cleaning, is \$2,729.80.

SPECIAL ASSESSMENTS.

About the usual amount of work was accomplished in this department during the year, but unfortunately the Board have but little to report as the result; almost everything having been destroyed by the fire.

A report in detail of such assessments as were saved, made by the Special Assessment Department, is herewith submitted, together with a list of improved streets.

SPECIAL ASSESSMENT DEPARTMENT.

CHICAGO, April 1, 1872.

F. H. BAILEY, Esq.,

Secretary of the Board of Public Works:

SIR—Herewith please find a tabular statement of the various improvements, and their estimated cost, for which assessments have been made during the year ending April 1, 1872, and also a summary, showing the cost of the various improvements, the total number of lamp-posts, the amounts for which assessments have been made for the past eleven years, and an alphabetical list of the improved streets in the city, showing the kind of improvement, when and by whom improved, and the number of feet of the different improvements. There had been prepared, or were in course of preparation, at the time of the fire of October 8th and 9th, 1871, assessments amounting in the aggregate to nearly \$2,000,000, which, with the exception of those shown in the accompanying statement, were all destroyed, thereby accounting for the seeming discrepancy between the work of this and former years.

**STATEMENT OF ASSESSMENTS FOR MISCELLANEOUS
STREET IMPROVEMENTS.**

No. of Warrant.	Nature of Improvement.	Street.	From	To	Am't of Assessment.
1844	Grading and Macad'ng.	Southwestern ave.	W. Madison st.	W. Twelfth st.	\$26,451.43
1845	" "	Cinderling, Elston ave.	Milwaukee ave.	W. North ave.	14,238.75
Total,					\$40,690.18

**STATEMENT OF ASSESSMENTS FOR THE ERECTION OF
LAMP-POSTS.**

No. of Warrant	No. of Posts.	Name of Street.	From	To	Am't of Assessm't.
1838	7	Washington ave.	Sheldon st.	St. John's place.	\$273.00
1839	3	Calumet ave.	Twentieth st.	Twenty-first st.	117.00
1840	3	Intersection of	University pl. and	Rhodes ave.	117.00
1841	5	W. Twenty-sec'd st.	Halsted st.	Union st.	195.00
1842	3	Rhodes ave.	Crittenden ave.	University place.	117.00
1843	7	Carroll st.	Paulina st.	Wood st.	273.00
Total,					\$1,092.00

STATEMENT OF ASSESSMENTS FOR LAYING GAS SERVICE PIPES.

No. of Warrant	Name of Street.	From	To	Amount of Assessment.
1800	Canalport ave.	Halsted st.	Morgan st.	\$309.00
1801	W. Adams st.	Ashland ave.	Robey st.	1,450.80
1802	N. Halsted st.	Indiana st.	Chicago river.	1,188.00
1803	W. Washington st.	Ashland ave.	Leavitt st.	1,159.20
1804	W. Harrison st.	Halsted st.	Centre ave.	1,215.60
1805	Depuyster st.	Des Plaines st.	Halsted st.	576.00
1806	W. Indiana st.	do.	Rucker st.	2,048.40
1807	W. Twelfth st.	Halsted st.	Centre ave.	1,469.40
1809	W. Chicago ave.	Sangamon st.	Milwaukee ave.	1,230.00
1810	W. Randolph st.	Halsted st.	Union Park.	1,368.20
1811	Milwaukee ave.	Elston ave.	Division st.	2,676.00
1812	Warren ave.	Ashland ave.	Leavitt st.	1,306.20
1813	Green st.	W. Madison st.	Harrison st.	1,152.60
1814	W. Madison st.	Robey st.	Western ave.	982.80
Total,				\$18,127.20

STATEMENT OF ASSESSMENTS FOR THE CONSTRUCTION OF SIDEWALKS.

No. of Warr't.	Name of Street.	From	To	Amount of Assessment.
1815	Seeley ave.	W. Madison st.	W. Van Buren st.	\$375.77
1816	Twenty-seventh st.	Wentworth ave.	State st.	82.80
1817	Shurtleff ave.	Twenty-sixth st.	Thirty-first st.	92.87
1818	Fourth ave.	Harrison st.	Taylor st.	26.00
1819	W. Jackson st.	Sangamon st.	Loomis st.	98.27
1820	Burnside st.	Thirty-fifth st.	Thirty-seventh st.	139.73
1821	Lincoln st.	W. Madison st.	W. Jackson st.	94.52
1822	Leavitt st.	W. Harrison st.	Flournoy st.	85.56
1823	Lee place.	Robey st.	Hoyne st.	141.31
1824	Holt st.	Blackhawk st.	Blanche st.	23.45
1825	Robey st.	Wabansia ave.	Peterson st.	66.24
1826	Cornelia st.	Milwaukee ave.	Noble st.	8.75
1827	Michigan ave.	Douglas place.	Thirty-seventh st.	77.63
1828	Cleaver st.	Division st.	Bradley st.	25.89
1829	Douglas place.	Halsted st.	Wallace st.	128.25
1830	Halsted st.	Fourth st.	Chicago ave.	31.29
1831	Milwaukee ave.	Rucker st.	Division st.	67.80
1832	Vincennes ave.	Douglas place.	Egan ave.	204.44
1833	W. Jackson st.	Ashland ave.	Southwestern ave.	116.28
1834	Oakley st.	W. Harrison st.	Flournoy st.	85.56
1835	Erie st.	Wood st.	Hoyne st.	116.95
1836	Auburn st.	Attica st.	Douglas place.	166.61
1837	Wilcox st.	Western ave.	Campbell ave.	56.90
Total,				\$2,312.87

SUMMARY.

TOTAL ASSESSMENTS FOR STREET IMPROVEMENTS.

North Division,	\$	
South Division,		
West Division,	40,690.18	
		<u>\$40,690.18</u>

TOTAL ASSESSMENTS FOR THE ERECTION OF LAMP-POSTS.

North Division,	\$	
South Division,	9 posts,	351.00
West Division,	19 posts,	<u>741.00</u>
		<u>1,092.00</u>

TOTAL ASSESSMENTS FOR LAYING GAS SERVICE PIPES.

North Division,	\$	
South Division,		
West Division,	<u>18,127.20</u>	
		<u>18,127.20</u>

TOTAL ASSESSMENTS FOR THE CONSTRUCTION OF

SIDEWALKS.

North Division,	\$	
South Division,		825.46
West Division,	<u>1,487.41</u>	
		<u>2,312.87</u>

Total assessments for North, South and West

Divisions, \$62,222.25

WEST DIVISION.

Total amount of assessments for Street Improve-		
ments,	\$40,690.18	
Total amount payable out of Appropriation Fund		
on account of same,	<u>8,329.10</u>	
Total estimated cost of Street Improvements,		<u><u>\$49,019.28</u></u>

TOTAL NO. OF LAMP-POSTS PROVIDED FOR BY ASSESSMENT.

NORTH DIVISION.

From April 1, 1871, to April 1, 1872, . . .		
Posts erected prior to April 1, 1871, . . .	1,468	
		1,468

SOUTH DIVISION.

From April 1, 1871, to April 1, 1872, . . .	9	
Posts erected prior to April 1, 1871, . . .	1,963	
		1,972

WEST DIVISION.

From April 1, 1871, to April 1, 1872, . . .	19	
Posts erected prior to April 1, 1871, . . .	3,124	
		3,143
Total number of Lamp-posts in the city, . . .		<u>6,583</u>

The following list shows the total amount of assessments made in each year by the Board of Public Works since it was created, in 1861:

For the year ending April 1, 1862, . . .	\$ 42,635.49	
" " " " " 1, 1863, . . .	46,493.67	
" " " " " 1, 1864, . . .	389,169.31	
" " " " " 1, 1865, . . .	103,576.35	
" " " " " 1, 1866, . . .	802,574.56	
" " " " " 1, 1867, . . .	317,206.18	
" " " " " 1, 1868, . . .	1,354,436.48	
" " " " " 1, 1869, . . .	2,395,683.03	
" " " " " 1, 1870, . . .	2,836,852.48	
" " " " " 1, 1871, . . .	2,359,835.89	
" " " " " 1, 1872, . . .	62,222.25	
Total for eleven years, . . .		\$10,710,685.69

The following table shows the improved streets in the city, the kind of improvement, when and by whom improved, and the length of the improvement on each street:

ALPHABETICAL LIST OF IMPROVED STREETS IN THE CITY OF CHICAGO, APRIL 1, 1872,
SHOWING THE KIND OF IMPROVEMENT, WHEN AND BY WHOM IMPROVED, AND THE NUMBER OF FEET IMPROVED.

Name of Street.	From	To	Nature of Improvement.	When Improved.	By Whom Improved.	No. of Lineal ft. Improved.
Aberdeen st.	Madison st.	Harrison st.	Wooden Bl'k Pavement.	1870	Nelson & Peterson	2,475
Adams st.	Michigan ave.	State st.	do	1868	Jno. Anderson & Co.	2,720
do	State st.	Market st.	do	1869	Jno. Anderson & Co.	2,373
do	Adams st. Bridge	Halsted st.	do	1869	McBean & Bro.	2,335
do	Halsted st.	Ashland ave.	do	1869	Robert McClelland	5,189
do	Ashland ave.	Robey st.	do	1871	Steel, McMahon & Steel	2,606
Archer ave.	State st.	Canal, or Slip.	do	1869-1870	Thomas Mackin	4,786
do	Canal, or Slip	Halsted st.	do	1870	DeGolyer & McClelland	1,474
do	Reuben st.	Western ave.	Cindering.	1867	J. De Creet & Co.	7,150
Blue Island ave.	Twelfth st.	Twenty-second st.	Macadamizing.	1868	G. W. Traver & Co.	6,832
do	Harrison st.	Twelfth st.	Wooden Bl'k Pavement.	1866	DeGolyer & McClelland	3,080
Calhoun pl.	Clark st.	In bl'k 56 Origin'l Town	do	1866	Robert Stuart	322
do	Clark st.	Dearborn st.	do	1868	Greeley & Mackin	320
Calumet ave.	Twenty-fourth st.	Cottage Grove ave.	do	1870	James G. McBean	342
do	Twenty-first st.	Twenty-fourth st.	do	1870	DeGolyer & McClelland	1,753
do	Cottage Grove ave.	Twenty-ninth st.	do	1871	do	2,125
Canal st.	Lake st.	Madison st.	do	1867	do	1,321
do	Madison st.	Twelfth st.	do	1869	Jno. Anderson & Co.	5,308
do	Twelfth st.	Sixteenth st.	do	1869	George Barnett & Co.	5,308
do	Sixteenth st.	Eighteenth st.	do	1870	Jno. Anderson & Co.	2,723
do	Lake st.	Fulton st.	Macadamizing.	1863	Hervey Nash	860
Canalport ave.	Canal st.	Halsted st.	Wooden Bl'k Pavement.	1870	Robert Stuart	358
do	Halsted st.	Morgan st.	do	1871	W. F. Hildreth	2,323
Central ave.	72 ft. s. of Lake st.	Randolph st.	do	1870	Robert Stuart	1,448
do	South Water st.	458 ft. s. of S. Water st.	do	1870	Thomas Mackin	270
Chicago ave.	Chicago River	N. Clark st.	Macadamizing.	1867	G. W. Traver & Co.	458
do	N. Clark st.	East line of Pine st.	Wooden Bl'k Pavement.	1870	DeGolyer & McClelland	3,373
do	Milwaukee ave.	The Chicago River.	do	1871	Ray & Whitney	1,918
						2,910

Clark st.	Chicago River	Randolph st.	Boulder Stones.	1858	De Golyer, Stuart & Co.	908
do	Randolph st.	Polk st.	Wooden Bl'k Pavement.	1859	John McBean	3,933
do	do	Twelfth st.	do	1867	Steel & McMahon	1,679
do	Chicago River	Chicago ave.	do	1867	do	3,303
do	Chicago ave.	Division st.	do	1868	De Golyer & McClelland	2,556
do	Division st.	North ave.	do	1869	De Golyer & McClelland	2,581
Clinton st.	W. Madison st.	W. Lake st.	do	1867	Robert Stuart	1,167
do	do	W. Van Buren st.	do	1869	Hervey Nash	1,588
do	W. Lake st.	W. Kinzie st.	do	1869	McBean & Bro.	1,033
Clybourn ave.	Division st.	North ave.	do	1870	Jno. Anderson & Co.	3,650
do	North ave.	Clybourn place.	Cindering.	1870	William Goggin	3,182
do	Clybourn place	Fullerton ave.	do	1870	George M. French	3,914
Clybourn place	Clybourn ave.	Elston ave.	do	1870	B. Bartelme	2,038
Custom House pl.	Monroe st.	Dearborn st.	Wooden Bl'k Pavement.	1865	Robert Stuart	272
Dearborn st.	Lake st.	Randolph st.	do	1871	De Golyer & McClelland	378
do	Madison st.	Monroe st.	do	1865	Thomas Mackin	397
do	Monroe st.	Jackson st.	do	1870	do	793
do	N. Water st.	Chicago ave.	do	1869	do	2,497
do	Chicago ave.	Division st.	do	1869	McBean & Bro.	2,556
do	Division st.	North ave.	do	1869	Robert McClelland	2,647
Dearborn place.	Randolph st.	Washington st.	do	1869	Jno. Anderson & Co.	385
De Puyster st.	Des Plaines st.	Halstead st.	do	1871	Kincade & Donoghue	808
Des Plaines st.	Van Buren st.	Fourth st.	do	1869	Jno. Anderson & Co.	4,825
do	do	Harrison st.	do	1870	James G. McBean	795
Division st.	Clark st.	Clybourn ave.	do	1869	DeGolyer & McClelland	2,071
do	Clybourn ave.	Halsted st.	do	1871	Steel, McMahon & Steel	2,290
do	N. Branch Canal	N. Branch Chicago Riv.	Cindering.	1871	A. Wallbaum & Co.	1,802
Douglas place.	South Park ave.	Ills. Central R. R.	Wooden Bl'k Pavement.	1871	Robert Stuart	2,520
Elston ave.	W. Clybourn place	W. Fullerton ave.	Cindering.	1871	McHugh & Duffy	4,320
Eighteenth st.	Wabash ave.	S. Branch Chicago River	Wooden Bl'k Pavement.	1869	Thomas Mackin	2,308
Erie st.	Chicago River	Pine st.	do	1870	DeGolyer & McClelland	4,755
Fourteenth st.	Michigan ave.	State st.	do	1870	do	720
Franklin st.	South Water st.	Lake st.	do	1868	Steel & McMahon	316
do	Randolph st.	do	Boulder Stones.	1867	John McBean	380
Amount carried forward,						136,079

ALPHABETICAL LIST OF IMPROVED STREETS IN THE CITY OF CHICAGO, APRIL 1, 1872.—CONTINUED.

Name of Street.	From	To	Nature of Improvement.	When Improved.	By Whom Improved.	No. of Linear ft. Improved.
Franklin st.	Randolph st.	Madison st.	Wooden Bl'k Pavement.	1868	Amount brought forward,	136,079
Green st.	W. Madison st.	Fulton st.	do	1871	Steel & McMahon	762
do	do	Harrison st.	do	1871	J. P. Dickey	1,514
Griswold st.	Van Buren st.	Taylor st.	do	1866	J. K. Lake	2,515
do	Jackson st.	Van Buren st.	do	1870	DeGolyer & McClelland	2,382
Haddock place.	State st.	Wabash ave.	do	1866	James Lyman	396
Halsted st.	Thirty-first st.	Egan ave.	Macadamizing.	1867	Jno. E. McMahon	848
do	Archer ave.	Thirty-first st.	do	1867	do	5,263
do	Lake st.	Harrison st.	Wooden Bl'k Pavement.	1867	DeGolyer & McClelland	3,252
do	Harrison st.	C., B. & Q. R. R. cross'g	do	1868	do	4,054
do	C., B. & Q. R. R. cross'g	Archer ave.	do	1869	Jno. A. Nelson	4,886
do	Lake st.	Indiana st.	do	1870	Jno. Anderson & Co.	4,564
do	Milwaukee ave.	N. Branch Chicago Riv.	do	1871	DeGolyer & McClelland	2,011
Harmon Court.	State st.	Michigan ave.	do	1868	Robert Stuart	2,337
Harrison st.	do	Wells st.	do	1870	DeGolyer & McClelland	724
do	Canal st.	Halsted st.	do	1870	DeGolyer & McClelland	1,553
do	do	Centre ave.	do	1871	Jno. Anderson & Co.	2,008
Hawthorn ave.	Larrabee st.	Halsted st.	do	1871	DeGolyer & McClelland	2,608
Huron st.	Clark st.	State st.	Macadamizing.	1871	W. H. Giles & Co.	2,985
Illinois st.	Wells st.	State st.	Wooden Bl'k Pavement.	1869	Thomas Mackin	678
do	State st.	St. Clair st.	do	1870	A. Wallbaum & Co.	1,404
Indiana st.	St. Clair st.	Clark st.	do	1871	D. D. & D. S. McBean.	1,346
do	Clark st.	Indiana st. Bridge.	do	1870	Thomas Mackin	2,026
do	Indiana st. Bridge	Rucker st.	do	1871	Selah Reeve	2,439
do	Rucker st.	Noble st.	do	1871	Lewis Dodge	3,693
Indiana ave.	Sixteenth st.	Twenty-second st.	do	1871	Ray & Whitney	1,326
Jackson st.	State st.	Market st.	do	1867	DeGolyer & McClelland	2,590
do	Canal st.	Halsted st.	do	1870	do	2,293
Jefferson st.	Fulton st.	N. line Alley E. 10 Original Town.	Macadamizing.	1871	McHugh & Duffy	2,008
do	Randolph st.	Van Buren st.	Wooden Bl'k Pavement.	1867-1868	Hervey Nash	610
do	do	Fulton st.	do	1869	Robert Stuart	2,375
				1868	DeGolyer & McClelland	706

ALPHABETICAL LIST OF IMPROVED STREETS IN THE CITY OF CHICAGO, APRIL 1, 1872.—CONTINUED.

Name of Street.	From	To	Nature of Improvement.	When Improved.	By Whom Improved.	No. of Lined ft. Improved.
Michigan ave.	Park place	Twelfth st.	Graveling.	1867	Amount brought forward,	275,222
do	Twelfth st.	Twenty-second st.	do	1867-1868	Hervey Nash & Co.	258
do	Twenty-second st.	Twenty-ninth st.	do	1870	Greeley & Mackin	5,246
do	Twenty-ninth st.	Egan ave.	do	1871	Thomas Mackin	3,924
do	Randolph st.	S. Water st.	Wooden Bl'k Pavement.	1868	Dolese & Shepard	6,500
do	So. Water st.	River st.	do	1871	Thomas Mackin	768
Milwaukee ave.	Division st.	North ave.	Macadamizing.	1864	S. S. Greeley	512
do	Des Plaines st.	Elston ave.	Wooden Bl'k Pavement.	1867	J. E. McMahon	4,010
do	Elston ave.	Division st.	do	1871	Nelson & McBean	4,315
Monroe st.	State st.	Michigan ave.	do	1867	Steel, McMahon & Steel	3,555
do	Clark st.	Market st.	do	1867	DeGolyer & McClelland	720
do	State st.	Clark st.	do	1869	Robert Stuart	1,620
do	Canal st.	Halsted st.	do	1870	Jno. Anderson & Co.	753
do	Halsted st.	Aberdeen st.	do	1871	DeGolyer & McClelland	2,008
Noble st.	North ave.	Milwaukee ave.	Cinderling.	1867	A. J. McBean	1,930
North ave.	Chicago River	N. Wells st.	Wooden Bl'k Pavement.	1871	Richard Riley	3,541
do	N. Wells st.	N. Dearborn st.	do	1870	P. Downey	5,796
Ohio st.	St. Clair st.	N. Clark st.	do	1871	McHugh & Duffy	1,535
Ontario st.	N. Clark st.	Kingsbury st.	do	1869	DeGolyer & McClelland	2,025
Park ave.	N. Clark st.	N. Dearborn st.	do	1870	Thomas Mackin	2,331
Pearson st.	Reuben st.	Leavitt st.	do	1871	do	320
Pine st.	Kush st.	E. line ab-let 7 lot 10 B. 20 &c. 3.	do	1870	W. F. Hildreth	3,953
do	Michigan st.	Chicago ave.	do	1871	A. J. McBean	750
Polk st.	Chicago ave.	Whitney st.	do	1869	Thomas Mackin	2,320
do	State st.	Chicago River.	do	1871	David Walker	1,044
Prairie ave.	Polk st. Bridge	Halsted st.	do	1869	Steel & McMahon	1,965
do	Sixteenth st.	Twenty-second st.	do	1870	Nelson & Peterson	2,944
do	Twenty-second st.	Cottage Grove ave.	Graveling.	1866	Thomas Mackin	2,600
do	Cottage Grove ave.	Thirtieth st.	do	1868	Robert Stuart	3,813
Quincy st.	State st.	Clark st.	Wooden Bl'k Pavement.	1871	DeGolyer & McClelland	3,845
do	La Salle st.	Fifth ave.	do	1870	Ray & Whitney	753
			do	1871	do	322

Randolph st.	Michigan ave.	Chicago River.	Wooden Bl'k Pavement.	1869	DeGolyer & McClelland	3,280
do	Randolph st. Bridge.	Halsted st.	do	1866	do	2,420
Rush st.	Halsted st.	Union Park.	do	1871	Ray & Whitney	4,363
Sangamon st.	Kinzie st.	Chicago ave.	Graveling.	1867	James Lyman	2,217
do	Van Buren st.	Fulton st.	Wooden Bl'k Pavement.	1869	John Anderson & Co.	3,248
Sedgwick st.	Fulton st.	Milwaukee ave.	do	1870	do	2,140
do	Chicago ave.	Division st.	do	1871	Jno. A. Nelson	2,560
do	Division st.	North ave.	do	1871	Selah Reeve	2,576
Sheldon st.	W. Madison st.	W. Randolph st.	do	1871	DeGolyer & McClelland	800
Sherman st.	Van Buren st.	Harrison st.	do	1866	J. K. Lake & Co.	794
do	Harrison st.	Taylor st.	do	1870	Jno. Anderson & Co.	1,590
do	Jackson st.	Van Buren st.	do	1870	DeGolyer & McClelland	396
Sixteenth st.	Michigan ave.	Prairie ave.	Graveling.	1866	Thomas Mackin	848
do	do	State st.	Wooden Bl'k Pavement.	1871	do	720
South Park ave.	Twenty-second st.	Twenty-ninth st.	do	1869	DeGolyer & McClelland	3,924
do	Twenty-ninth st.	Douglas place.	do	1871	Thomas Mackin	3,947
South Western ave	W. Twelfth st.	Western City Limits.	Graveling.	1871	do	11,520
State st.	Chicago River	Twelfth st.	Boulder Stones.	1858	DeGolyer, Stuart & Co.	6,865
do	Kinzie st.	Michigan st.	Wooden Bl'k Pavement.	1865	James Steel	2,218
do	Michigan st.	Chicago ave.	do	1867	DeGolyer & McClelland	2,320
Superior st.	Pine st.	St. Clair st.	do	1871	Selah Reeve	300
Taylor st.	Clark st.	Wells st.	do	1871	Ray & Whitney	755
Twelfth st.	Michigan ave.	State st.	do	1869	DeGolyer & McClelland	721
do	State st.	Chicago River.	do	1870	Steel & McMahon	1,619
do	Halsted st.	Twelfth st. Bridge.	do	1871	Robert Stuart	3,334
do	do	Centre ave.	do	1871	W. F. Hildreth	2,603
do	Ashland ave.	S. Western ave.	Macadamizing.	1870	W. H. Giles & Co.	4,595
Twentieth st.	State st.	Ills. Central R. R.	Graveling.	1871	McHugh & Duffy	2,003
Twenty-first st.	do	Calumet ave. (Prairie to Indiana ave	Wooden Bl'k Pavement.	1871	DeGolyer & McClelland	1,435
Twenty-second st.	do	S. Park ave. [not done.]	do	1868	McBean & Bro.	2,672
do	Wentworth ave.	Chicago River.	do	1871	DeGolyer & McClelland	1,964
Twenty-fourth st.	Wabash ave.	Calumet ave.	do	1871	J. G. McBean	1,470
Twenty-sixth st.	do	South Park ave.	do	1871	DeGolyer & McClelland	1,848
Twenty-seventh st.	Johnson ave.	do	do	1871	do	757

Amount carried forward,

431,001

ALPHABETICAL LIST OF IMPROVED STREETS IN THE CITY OF CHICAGO, APRIL 1, 1872.—CONTINUED.

Name of Street.	From	To	Nature of Improvement.	When Improved.	By Whom Improved.	No. of Lineal ft. Improved.
Twenty-eighth st.	Wabash ave.	Michigan ave.	Wooden Bl'k Pavement.	1871	Amount brought forward,	431,001
do	do	State st.	do	1871	Robert Stuart	404
Union st.	Madison st.	Milwaukee ave.	do	1870	Lewis Dodge	386
Van Buren st.	State st.	Michigan ave.	do	1866	John Anderson & Co.	2,536
do	do	Chicago River.	do	1866	D. L. DeGolyer	720
do	Canal st.	S. Branch Chicago Riv.	do	1870	A. & A. J. McBean	2,550
do	do	Halsted st.	do	1868	Nelson & Peterson	500
do	Halsted st.	Loomis st.	do	1870	DeGolyer & McClelland	2,008
Wabash ave.	Randolph st.	Twenty-second st.	do	1866	Jno. Anderson & Co.	3,924
do	S. Water st.	Randolph st.	do	1866	Stuart & Gray	11,430
do	Twenty-second st.	Twenty-ninth st.	do	1867	Greeley & Mackin	848
Water st., S.	Michigan ave.	Wabash ave.	do	1865	Thomas Mackin	3,924
do	Clark st.	Franklin st.	do	1865	do	372
do	do	Wabash ave.	Block Stones.	1865-1866	do	1,200
do	Michigan ave.	Central ave.	Wooden Bl'k Pavement.	1870	do	1,281
Washington st.	State st.	Michigan ave.	do	1866	J. K. Lake	196
do	do	Market st.	do	1870	Steel & McMahon	710
do	W. Water st.	Elizabeth st.	do	1869	Robert Stuart	2,334
do	Elizabeth st.	Union Park.	do	1869	John Anderson & Co.	5,344
do	Ashland ave.	Leavitt st.	do	1871	A. J. McBean	1,658
Warren ave.	Ashland ave.	do	do	1871	Steel, McMahon & Steel	3,953
Wells st.	Van Buren st.	Madison st.	do	1865	Stuart & Steel	3,553
do	do	Taylor st.	do	1866	H. Nash & Son	1,588
do	Lake st.	S. Water st.	do	1866	J. K. Lake	2,384
do	do	Randolph st.	do	1867	DeGolyer & McClelland	315
do	Randolph st.	Madison st.	Block Stones.	1869	do	380
do	Wells st. Bridge	Chicago ave.	Wooden Bl'k Pavement.	1869	Robert Stuart	758
do	Chicago ave.	Division st.	do	1869	do	3,317
do	Division st.	N. Clark st.	do	1870	Selah Reeve	2,556
do	Steele st.	Ills. and Mich. Canal.	Cindering.	1871	George M. French	4,443
Western ave.						3,340
TOTAL,						500,313

RECAPITULATION.

384,637 feet Wooden Block Pavement, equal to	.	.	.	.	.	72 ⁴⁴⁷ ₅₂₈₀ Miles.
29,347 " Cindering,	"	"	"	"	"	5 ²⁹⁴⁷ ₅₂₈₀ "
41,793 " Graveling,	"	"	"	"	"	7 ⁴⁸³³ ₅₂₈₀ "
32,552 " Macadamizing,	"	"	"	"	"	6 ⁸⁷⁴ ₅₂₈₀ "
11,982 " Stone Pavement,	"	"	"	"	"	2 ¹⁴²² ₅₂₈₀ "
Total number of miles improved,	.	.	.	.	.	94 ³⁹⁹³ ₅₂₈₀

NOTE.—In the above list there are a number of streets—West Lake street, West Madison street, North Wells street, Division street, Milwaukee avenue, part of South Water street, and others which were originally macadamized or paved with boulder stones, which have since been paved with wooden block pavement.

Respectfully submitted,

H. J. JONES,

In charge of Special Assessments.

SIDEWALKS.

As all the records of the Sidewalk Department were lost, the customary report of the Superintendent is necessarily omitted. About the usual number of walks were constructed and reconstructed during the season ; but the exact amount cannot now be determined.

The Board renew their recommendation, made in previous reports, for the adoption of some material, more durable than wood, for the construction of sidewalks.

Many of the wooden walks are becoming old and decayed, and large sums of money will have to be expended annually to keep them in order.

The material used by the "Chicago Paving Company," and others, composed principally of ground stone and asphalt, has proved very desirable for sidewalk purposes, wherever it has been used in this city. It is laid in a heated state, and becomes hard when cool. The walks composed of this material were but very little injured by the fire.

A considerable amount of what is known as the "Schillinger Patent Sidewalk," has been put down in different parts of the city during the past year. It is composed of broken stone and sand mixed with "Portland Cement."

Different colors of material are laid in alternate squares and the walk resembles stone in appearance and quality.

The amount expended by the city for maintaining sidewalks, including inspection and care, is as follows :

North Division,	\$6,473.98
South Division,	10,850.62
West Division,	6,204.73
Total,	<u>\$23,529.33</u>

BRIDGES.

Great strength and durability are required in our bridges to endure the strain of frequent opening and closing, during the season of navigation, and the immense travel to which they are continually subjected. For opening and closing easily and quickly, they must be very nicely adjusted.

The cost of maintaining the city bridges for the year, including repairs and bridge-tenders' salaries, is \$57,332.28.

A new iron viaduct has been constructed by the P., Ft. W. & C. R. R. over their tracks at Randolph street. It is a very durable and substantial structure.

The wooden bridge at South Halsted street, constructed in 1860, had become unsafe for travel, and has been torn down.

A contract has been made for a new bridge at this point, and the work is nearly completed. Contracts have also been made to replace the bridges and viaducts destroyed by fire.

The following table exhibits the particulars of these contracts:

ELEVENTH ANNUAL REPORT OF

Location of Bridge.	Part of Work.	Material.	Contractor.	Date of Contract.	Cost.	When Completed.
Clark st.	Superstructure	Wood & Iron Comb'n	Fox & Howard	Oct. 25, 1871		
	Substructure	Stone	do		\$32,000.00	Jan. 9, 1872
Van Buren st.	Superstructure	Wood & Iron Comb'n	E. Sweet, Jr. & Co.	Oct. 25, 1871	13,900.00	Jan. 12, 1872
Chicago Ave.	Substructure	Stone	Fox & Howard	Nov. 27, 1871	20,850.00	June 15, 1872
S. Halsted st.	Superstructure	Wood & Iron Comb'n	do			
Rush st.	Protection	Iron	King Iron Bridge & Mfg. Co.	Nov. 27, 1871	15,900.00	Nearly Completed.
	Substructure	Iron	O. B. Green	Nov. 25, 1871	5,860.00	Feb. 1, 1872
Polk st.	Superstructure	Stone	Detroit Bridge & Iron Works	Dec. 26, 1871	15,600.00	May 17, 1872
	Substructure	Iron	E. Sweet, Jr. & Co.	Dec. 26, 1871	23,970.00	June 1, 1872
Adams st.	Superstructure	Stone	King Iron Bridge & Mfg. Co.	Dec. 26, 1871	12,625.00	June 17, 1872
	Substructure	Iron	Fox & Howard	Dec. 26, 1871	30,274.26	
State st.	Superstructure	Stone	Keystone Bridge Co.	Jan. 1, 1872	14,880.00	June 18, 1872
	Substructure	Iron	Fox & Howard	Feb. 10, 1872		In progress.
	Superstructure	Iron	Keystone Bridge Co.	Feb. 9, 1872	22,500.00	In progress.
	Substructure	Stone	Fox & Howard	Feb. 5, 1872	*	In progress.
Wells st.	Superstructure	Iron	do	Feb. 9, 1872	*	In progress.
VIADUCTS.						
State st.		Iron	Keystone Bridge Co.	Feb. 9, 1872	\$29,840.00	In progress.
Clark st.		Iron	do	June 5, 1872	12,300.00	In progress.
	Approach		Robert Stuart	May 3, 1872	*	In progress.
Wells st.		Iron	Keystone Bridge Co.	Feb. 9, 1872	12,000.00	Nearly completed.

* NOTE.—The exact cost cannot be given until the work is completed, as the contract is by the piece

PUBLIC BUILDINGS.

NEW CITY HALL.

The week following the fire, work was commenced upon a new City Hall on the Reservoir lot at the southeast corner of Adams and La Salle streets. The building was completed and occupied on the first day of January last. It covers the entire lot, being about 178 feet square, and contained at that time rooms sufficient to accommodate all the city officers, together with the Law Library, the County Recorder, and several of the Courts.

Additions to the height have since been made, and room obtained in that way for all the public offices, both of the City and County.

The amount expended by the city in constructing and furnishing this building is about \$75,000.

CITY BRIDEWELL.

The expenditure by the Board upon this institution, during the past year, is \$39,331.32.

The total cost, up to the time when it was transferred by the Board to the Bridewell Commissioners, in August last, was \$343,968.07.

SCHOOL BUILDINGS.

The following school buildings have been erected during the last year:

WASHINGTON SCHOOL.—A four-story and basement brick building, located on Morgan street, between Erie and Fourth streets, cost		\$62,896.00
CALUMET AVENUE PRIMARY—A three-story and basement brick building, on Calumet avenue, near Twenty-sixth street, cost		20,634.60

LINCOLN STREET PRIMARY.—A three-story and basement brick building, corner of Lincoln and Fourth streets, cost . .	\$20,778.61
POLK STREET PRIMARY.—A three-story and basement brick building, on Polk street, east of Halsted street, cost . .	19,975.55

POLICE AND FIRE BUILDINGS.

The following buildings have been constructed for the use of the Police and Fire Department:

A brick Engine and Hook and Ladder House, on Jefferson street, between Jackson and Van Buren streets, cost .	\$12,543.00
A brick Engine House on Archer avenue, near State street, cost,	7,677.00
A frame Police Station on Deering street, near Archer avenue, cost	2,450.00

PUBLIC PARKS.

The value of our public parks, as places of resort for pleasant and healthful outdoor exercise, is attested by the multitude of people who frequent them.

Probably there is no appropriation made by the city which yields a greater return in public benefits, in proportion to the amount, than that made for the support of the parks.

The expenditure in this department is as follows :

For Lincoln Park,	\$17,110.58
For Washington Park,	606.43
For Lake Park,	39,906.75
For Dearborn Park,	204.07
For Ellis Park,	2,569.31
For Union Park,	3,939.95
For Jefferson Park,	6,746.75
For Wicker Park,	47.80
For Vernon Park,	2,495.50

A large amount of filling was done at Lake Park during the year, and considerable progress was made in grading, sodding, and constructing walks, prior to the fire ; soon after this, however, that portion of the ground fronting on Michigan avenue was rented temporarily for business purposes, and on that account the work of grading and finishing was suspended. It is the design of the Board to resume this work as soon as the ground is vacated.

The principal expenditure upon the other parks has been in their care and maintenance.

CONCLUSION.

The Board respectfully invite your attention to the appended reports of the City Engineer and of the Superintendent of Streets and Bridges; also to the detailed statement of their financial transactions.

Respectfully submitted,

W. H. CARTER,	} <i>Board of Public</i>	
R. PRINDIVILLE,		<i>Works.</i>
J. K. THOMPSON,		

CITY ENGINEER'S REPORT.

CHICAGO, July 1, 1872.

To the Board of Public Works :

GENTLEMEN—Herewith your Engineer respectfully presents his Report for the year ending March 31st, 1872, and, as usual, the first part of it is the

REPORT OF THE ENGINEER OF PUMPING WORKS.

PUMPING DEPARTMENT, WATER WORKS,
CHICAGO, July 1, 1872.

E. S. CHESBROUGH, Esq., *City Engineer :*

DEAR SIR—I submit herewith my Eighteenth Annual Report of the operations of this department for the year ending March 31st, 1872.

The usual tabulated statistics will be found incomplete in the following report, owing to the loss of Records in the partial destruction of the works by the terrible conflagration of the 8th and 9th of October last.

Before entering upon matters incident to our annual report, it may be of interest to make brief mention of events, at the time of, and immediately subsequent to the great fire, in order to convey some idea of the extent of damage done the works.

The machinery, the buildings and all connected with this department were never in better condition than at the time of the fire. It being on Sunday the reservoirs were full of water and the supply therefore was unusually good.

Notwithstanding the conflagration commenced several miles distant and at the time a fearful gale was blowing towards the works, yet as the walls of the buildings were of stone, the roof covered with slate, and the whole structure generally quite as substantial as *ordinary circumstances* would require, besides being located in the center of a block with streets on three sides and the lake in the rear, there appeared no immediate cause for alarm or anxiety for the safety of the works. The rapid advance of the main body of fire, created, however, an incessant "shower" of sparks and embers, in our vicinity admonishing those present to take every precaution at hand to guard the works against destruction. With this view a line of hose was laid from hydrant and men with buckets of water stationed upon the roof and between that and the ceiling. Notwithstanding these precautions, the north end of the roof caught fire in several places but the flames were promptly subdued. The first building that caught fire in the immediate neighborhood was a cooper and paint shop on the lake shore, at least six hundred feet distant: at this time, with this exception, there were no buildings on fire for several blocks south of the works.

The roof of the main building, as before stated, was covered with slate, the bays and that portion adjoining the battlements of stone, three feet high, were covered with tin. There was no exterior wood work in the cornice or elsewhere. However, but a short time elapsed before the roof ignited, the fire communicated to the floors and other wood work and the interior became a mass of flames. At this time Lill's Malt House and Brewery, immediately south, caught fire and the flames from these buildings were driven by the wind towards the works, adding intensity and volume to the fire which had already made sad havoc with the works, driving the employes from their posts. The flames from this time spread with such rapidity that the whole neighborhood for blocks around became a "a sea of fire," thus at about 3 o'clock on the morning of the 9th of October the pumping works became an utter wreck, nothing but the naked walls of the building and the broken and blackened skeletons of three engines were left to mark the spot from whence only a few hours before

flowed millions of gallons of pure water for the comfort and convenience of our citizens. The water tower was but slightly damaged.

Assistant Engineer Trautman, with the regular night corps of firemen and others, were on duty at the time of the fire; they courageously remained at their posts until a portion of the roof fell when the engines were stopped, the fires hauled and the safety valves raised, leaving barely time for the faithful men to escape from the burning building. The safety valve levers were suspended by ropes which soon burned, allowing the valves to close; this greatly endangered the boilers, as they were literally surrounded by fire; however, the main steam pipe (seventeen inches in diameter) was quickly melted off, allowing the steam to escape from the boilers.

In consequence of the whole neighborhood being an unbroken mass of flame it was impossible to longer remain in the vicinity. With great difficulty the works were reached about 11 o'clock A. M. on the 9th, the premises presenting an indescribable scene of devastation.

Although the engines were stopped at about 3 o'clock the supply of water continued from the reservoirs for sometime thereafter.

TEMPORARY SUPPLY.

Fortunately, the water in the river was in a comparatively good condition, owing to the strong current flowing from the lake to the canal.

R. T. Crane, Esq., President of the N. W. Manufacturing Co., whose establishment was beyond the fire, tendered the use of a number of steam pumps for the purpose of pumping a limited supply of water from the river to a portion of the West Division.

The main pipe at Adams street was accordingly tapped. The pumps were connected by Mr. Crane and his assistants.

John C. Gault, Esq., General Superintendent of the C. & N. W. R. R. Co., promptly furnished a locomotive from the boiler of which steam was secured, and temporary pumps at Adams street were started at midnight on the 10th. The supply was necessarily very

limited, and although the quality of the water was far from what our citizens had been used to, yet it was *water*, and amid the great excitement and suffering among all classes, the water from the Chicago River was doubtless appreciated by those who were fortunate in securing it.

WORK OF REPAIRS.

On the morning of the 10th the work of clearing the ruins of the pumping works was commenced. Upon examination, not only the engines but the foundations were found seriously damaged. Parts of the engines, too numerous to mention, were broken beyond repair, thus requiring patterns to be made in order to obtain new castings. Nearly every joint of the steam and water pipes were destroyed, as well as nearly all the lead joints connecting the water mains within the building. Fortunately, the boilers were but slightly damaged. More than one hundred and seventy-five feet of 17-inch copper steam pipe was entirely destroyed, much of it being melted into a shapeless mass. (In replacing this pipe we made a virtue of necessity and made permanent alterations to meet the requirements of new boilers.)

Several of the stone piers forming the engine foundation were so badly burned as to assume the shape of an hour-glass, involving nearly entire reconstruction.

As the stock of all the large metal warehouses had been destroyed, there was no copper wherewith to replace the steam pipes. Fortunately, E. Smeeth, Esq., contractor for making steam pipe for the new engines, had a quantity of material for that purpose on hand.

Upon application, this gentleman placed at the disposal of the city both his material and men. David M. Ford, Esq., also surrendered the facilities of his extensive establishment night and day to the city. To Mr. Ford, and especially to the indefatigable efforts of his superintendent, Mr. John A. Kley, is the city indebted in a great measure for the rate of progress made in work of repairs. The entire stock of wrenches and other tools belonging to the works

being destroyed, much inconvenience was at first experienced, but through the obliging Superintendent of Machinery of N. W. R. R. Co., Mr. G. W. Tilton, as well as from Messrs. C. Mason & Son and others, sufficient tools and other supplies were obtained to proceed with the work.

During the first three days between two and three hundred men were at work upon the premises, among whom were engineers, machinists, boiler-makers, coppersmiths, masons, carpenters, riggers and laborers, and quite a number that did not belong to either of these honorable callings. Nevertheless all worked with a will night and day. A cook-house was improvised, the Chicago Relief and Aid Society furnished an abundance of wholesome provisions, and over 250 men were served with three meals daily during about five days, and a less number for several days thereafter. The repairs had so far advanced that on the 17th of October, eight days after the fire and seven days from the time of commencing work, the north or double engines were started at 8:20 P. M. and run through the night. Considerable trouble ensued from an indiscriminate closing of stop-gates in the main pipes, when the temporary pumps at Adams street were started, as well as from an accumulation of air in pipes. This difficulty was soon remedied.

The engine worked satisfactorily, and continued to supply the city without stopping until December 11th, a period of nearly two months. The other engines were in running order by the 10th of November. The water supply, therefore, has been uninterrupted since the 17th of October.

CONDITION OF BUILDINGS, Etc.

The present temporary roof and windows were not in place until the 22nd of November. Those on duty, therefore, were subjected to much inconvenience and hardship from inclement weather.

From the date of the fire up to December 1st, the long, dreary nights were passed amid the aggregated glimmer of a score of small

oil lamps. When gas was admitted to the mains, it proved, under the circumstances, a luxury.

During the past Winter and Spring the portion of main building devoted to offices, etc., was put in good repair. The heating apparatus was also refitted.

FUEL.

During the past Winter and Spring considerable trouble ensued from the character of the fuel used. At the time of the fire there were several thousand tons of anthracite coal stored near the river, nearly all of which was so much damaged by the fire as to render it unfit for use at these works.

All kinds of coal became very scarce in the city. However, through the personal attention of Robert Law, Esq., the contractor, a sufficient quantity was delivered to keep the works in operation.

NEW ENGINE.

A large portion of the work of this structure was in place at the time of the fire. It, together with the foundation, suffered considerable damage. All the heavy timbers put up for the purpose of sustaining the roof trusses, by which the heavy parts of engine were to be put in place, were of course consumed. Two car-loads of expensive machinery, consisting of composition valves, etc., were landed at foot of Pine street. All this work was melted into a shapeless and useless mass.

The three large boilers intended for new engine were far advanced towards completion at the establishment of A. F. Bushick, Esq., of this city; but they were so badly damaged by the fire as to require a large portion of them to be taken apart and rebuilt. The loss upon the new engines and boilers will reach about \$9,000, besides greatly delaying their final completion, which, under existing circumstances, is of itself a serious matter. The work upon the engine had so far progressed that it was thought it might be put in use about the first

of June; but the delay in finishing the boilers will deprive the city of use of new engine for several weeks.

A full description of new machinery will be deferred until the next Annual Report.

Much work remains to be done, such as plastering the walls; the permanent roof and floors; the gallery; repainting engines; constructing coal-houses, and finishing the iron fence around the premises.

Owing to the loss of our records, much of the following is estimated, and a portion obtained from the printed reports of former years and from the books of the "Board." During the year ending 31st of March last, 8,423,890,966 gallons of water were pumped, being an increase of 480,000,000 over the year previous. The daily average during the year was nearly 23,500,000 gallons, while the average for month of August last was 28,000,000, and for several days during last part of July and first of August the daily amount reached over 31,000,000.

The following table will show the operations of engines and boilers during the year:

OPERATIONS OF ENGINES AND BOILERS.

Months.	No. of Days.	No. of Hours Run per Month.	Average No. of Hours Run per Day.	Total Revolutions per Month.	Average No. of Revolutions per Day.	Total No. of Gallons Water Pumped per Month.	Average No. of Gallons Water Pumped per Day.	Total Pounds of Coal Consumed per Month. FOR PUMPING.	Average Pounds of Coal Consumed per Day. FOR PUMPING.
1871, April	30	h. m. 720 00	h. m. 24 00	No Record.	No Record.	720,000,000	24,000,000	No Record.	No Record.
May	31	744 00	24 00	"	"	713,000,000	23,000,000	"	"
June	30	720 00	24 00	"	"	735,000,000	24,500,000	"	"
July	31	744 00	24 00	"	"	806,000,000	26,000,000	"	"
August	31	744 00	24 00	"	"	868,000,000	28,000,000	"	"
September	30	720 00	24 00	"	"	780,000,000	26,000,000	"	"
October	24	535 10	17 16	*498,967	16,095	442,337,951	18,430,748	963,050	40,127
November	30	720 00	24 00	*778,557	25,952	657,138,219	21,904,607	1,532,470	51,082
December	31	744 00	24 00	*861,737	27,798	620,598,358	20,019,802	1,647,110	53,132
1872, January	31	744 00	24 00	727,204	23,458	684,569,031	22,082,872	1,890,940	60,998
February	29	696 00	24 00	711,691	24,541	668,788,030	22,061,656	1,894,740	65,336
March	31	744 00	24 00	839,493	27,080	728,459,377	23,498,689	2,069,590	66,761
Total,	359	8,575 10	281 16	. . . . .	. . . . .	8,423,890,966	280,497,874	. . . . .	. . . . .
Gen'l Av'ge p. M.	. . .	714 36	23 26	. . . . .	. . . . .	701,990,914	23,374,823	. . . . .	. . . . .
Gen'l Av. p. Day.	. . .	23 26	. . . . .	. . . . .	. . . . .	23,464,877	. . . . .	. . . . .	. . . . .

NOTE.—Coal used for heating premises included in above amount.

* Estimate—No Register.

The engines have been in constant operation during the year except from the time of the fire to the 17th of October, a period of nine days, the total running time being 8,575¹⁰/₁₀₀ hours.

During the year the following amount of coal was received:

	Tons.	Pounds.
On hand April 1st, 1871,	47	—
Received of Large Egg Lehigh,	7,126	900
“ “ Hocking Valley,	105	1,340
“ “ Willow Bank,	350	1,650
“ “ Massilon,	573	1,400
“ “ Straitsville,	602	1,030
“ “ Indiana Block,	540	570
“ “ Large Egg Lehigh (burnt),	452	460
“ “ Coshocton,	453	510
“ “ Ormsby,	15	940
	<u>10,267</u>	<u>800</u>

Of these amounts there has been used—

	Tons.	Lbs.
For pumping, heating buildings, etc.,	10,006	260
For workshop, pipe-laying, and other uses,	186	540
On hand April 1st, 1872,	75	000
	<u>10,267</u>	<u>800</u>

The expenses due to pumping during the past year were as follows:

Salaries of engineers,	\$ 7,380.00
Labor, firemen, etc.,	9,891.59
10,006 ²⁶⁰ / ₂₀₀₀ tons of coal, at an average cost of \$8.09,	80,979.85
493 gallons of lard oil,	428.93
310½ “ “ cylinder oil,	388.13
10 “ “ sperm oil and 5 galls. rapeseed oil,	22.25
5 “ “ lubricating castor oil,	6.25
246½ pounds of packing,	87.92
Small stores,	220.94
1,437 pounds of waste,	232.98
Gas for lighting works,	1,021.97
Repairs of engines and boilers,	678.62
	<u>\$101,339.43</u>

Cost of delivering water, per million gallons, \$12.03.

Cost of delivering water per million gallons in former years, and cost of coal:

	Average cost of Coal per Ton.	Cost per million gallons.
1864,	\$6.53	\$11.72
1865,	9.94	16.64
1866,	9.21	15.25
1867,	8.51	14.03
1868,	7.03	11.87
1869,	7.60	12.45
1870,	6.93	11.71
1871,	7.49	11.31
1872,	8.09	12.02
Average for nine years, . . .	<u>\$7.93</u>	<u>\$13.00</u>

The quantity of water pumped each month for the past fourteen years, also the total quantity pumped each year, together with the daily and annual increase, will be found in following tables:

TABLE
SHOWING QUANTITY OF WATER PUMPED EACH MONTH, FROM JAN. 1, 1858, TO APRIL 1, 1872.

MONTHS.	1858	1859	1860	1861	1862	1863	MONTHS.	1863-64
January . .	81,538,179	106,905,665	132,284,454	137,651,918	151,971,047	169,900,255	April . .	173,519,952
February . .	69,426,515	106,401,412	130,800,720	142,071,067	168,931,783	158,108,450	May . .	198,119,348
March . .	82,677,463	102,415,983	150,331,680	135,576,447	192,937,942	159,930,404	June . .	194,255,701
April . .	82,600,782	89,994,235	132,930,546	128,371,178	170,081,570	Hereafter the year commences on the first day of April.	July . .	209,332,677
May . .	82,279,920	116,007,263	141,171,078	150,489,168	181,483,032		August . .	217,561,920
June . .	90,211,505	113,098,416	148,197,024	155,996,352	199,113,518		September . .	217,229,652
July . .	101,670,736	133,800,336	166,394,640	147,182,793	209,215,872		October . .	185,678,001
August . .	107,176,652	123,266,556	152,427,690	168,602,494	195,588,295		November . .	176,132,600
September . .	108,534,540	131,735,847	132,272,202	152,710,186	186,902,888		December . .	199,592,696
October . .	101,046,605	141,527,040	148,710,195	149,362,166	199,045,045		January . .	209,884,992
November . .	86,385,840	127,342,018	150,493,248	153,879,648	187,002,720		February . .	176,088,647
December . .	98,316,722	122,653,139	130,773,075	145,261,272	176,006,027		March . .	183,712,268
Totals, . .	1,091,865,459	1,415,147,910	1,716,786,552	1,767,154,689	2,217,279,739	487,939,109	Totals,	2,336,108,454

TABLE
SHOWING TOTAL QUANTITY OF WATER PUMPED, TOGETHER WITH ANNUAL AND DAILY INCREASE.

ALSO, THE GREATEST DAILY AVERAGE FOR A SINGLE MONTH FOR THE FOLLOWING YEARS:

YEARS.	Total Quantity Pumped. GALLONS.	Annual Increase. GALLONS.	Average Daily Quantity Pumped. GALLONS.	Average Daily Increase. GALLONS.	GREATEST DAILY AVERAGE.	
					MONTHS.	GALLONS.
1858	1,091,865,459		2,991,413		September . .	3,617,818
1859	1,415,147,910	323,282,453	3,877,119	885,706	October . . .	4,565,388
1860	1,716,786,552	301,338,642	4,703,525	826,406	July	5,367,569
1861	1,767,154,689	50,368,137	4,841,520	137,995	August	5,438,790
1862	2,217,279,739	450,125,050	6,074,739	1,233,219	July	6,748,899
1863	2,336,108,454	118,428,715	6,400,298	325,559	January	6,770,483
1864	2,523,339,218	187,230,764	6,913,259	512,961	August	8,293,850
1865	2,777,817,349	254,478,131	7,610,459	697,200	September . .	8,871,530
1866	3,168,760,609	390,943,260	8,681,536	1,071,077	July	10,022,164
1867	4,231,791,659	1,063,031,050	11,562,273	2,880,737	March	12,455,113
1868	5,374,624,576	1,142,832,917	14,724,999	3,162,726	March	16,414,460
1869	6,801,146,720	1,426,522,144	18,633,278	3,908,279	July	20,689,014
1870	7,944,684,840	1,143,538,120	21,766,280	3,133,082	August	25,712,589
1871	8,423,890,966	479,206,486	23,464,877	1,698,617	August	28,000,000
Average for 14 years,	3,639,314,195	523,644,705	10,160,397	1,462,397	. . . . .	11,640,548

WORKSHOPS.

The building constituting workshops, stable, etc., has been rebuilt, new tools purchased, and damaged ones repaired, enabling work to be done as usual.

There are no records showing the amount of work done, the annual earnings, nor the material on hand.

The cost of tools destroyed by the fire was \$6,576.94. Cost of new tools since fire, \$2,032.30.

Cost of running shop up to April 1st, 1872, \$1,979.39.

Respectfully,

DEWITT C. CREGIER,

Engineer.

LESSONS TAUGHT BY THE FIRE.

Mr. Cregier's account of the efforts made to save the Pumping Works from destruction by the great fire, and of the condition they were left in by that event, must call up again reflections concerning their construction. It is very easy now to see where we might have guarded better against an occurrence of this kind, but considering the fact that no fire-proof building, so called, in the burnt district withstood the intensity of the heat, it seems almost useless to speculate upon what would have been the result had a different course been pursued originally. While we are not aware that other pumping works constructed either before or after ours were made essentially different with regard to roofs, but know the contrary with regard to some of the most important ones in our country, we may learn from our costly experience the following lessons:

The first is, to have the least possible amount of combustible materials in every part of such a building. It was a fortunate circumstance that the roofs of the boiler rooms were not only covered with slate, as was that of the main building, but were of iron beneath the slate. This, together with the incombustible covering upon the boilers and the faithful efforts of those in charge, saved the boilers from serious injury. It is difficult to estimate what would have been the delay, trouble and expense had the boilers required extensive repairs.

The second is, to have as much open space as possibly can be afforded around such a building. Had the men succeeded in putting out the fire, and preserving the roof a little longer, there can be no doubt that the burning of Lill's brewery, immediately south of the works, would have forced them to leave, for they could not have lived in such intense heat. Case after case of this kind occurred in other portions of the city, where parties were on their

premises and well prepared to extinguish a fire, but compelled by intensely heated air to fly before the flames reached them.

The third is, not to keep a large city entirely dependent on one set of pumping works for a supply of water. Fortunately for Chicago, considering the effect of the new State Constitution in preventing any further increase of the city's indebtedness for many years, this question was discussed thoroughly and the erection of duplicate pumping works in another part of the city not only decided upon, but the means were provided for doing it before the fire.

In addition to the kind deeds and offers to the city in connection with the Water Works, mentioned by Mr. Cregier, the Illinois & St. Louis Bridge Co. sent us three large Cameron pumps, with fixtures. These were put in working order at the foot of Michigan avenue, near Rush Street Bridge, and in case of an apprehended failure of the only pumping engine at work for several weeks, would have proved invaluable. Mr. H. R. Worthington, of New York, offered to send one of his Duplex Pumping Engines, ready to put up. The operatives of the Boston Water Works sent \$412.12 for the benefit of the suffering operatives of our own works. Capt. E. B. Ward, of Detroit, offered services of employes for repairs on Water Works, and the Illinois Central R. R. Co. made arrangements to send a locomotive to be used as a boiler, and no doubt most, if not all, the other companies would have done the same had they been requested. It is feared that, during the confusion which prevailed with regard to the transmission of messages the first few days after the fire, many other kind offers were overlooked.

CONSUMPTION OF WATER.

The general uniformity in this respect has been much disturbed by the great fire, but as the rebuilding of the burnt portions of the city progresses, it becomes more and more evident that the data upon which the estimates for future wants have been heretofore based, and which are distinctly stated on pages 66 and 67 of the last Annual Report, must still be relied upon. While the actual consumption of water was greatly diminished by the fire, the waste was so much increased, by the thousands of service pipes which could not be closed in the burnt district, that the daily average number of gallons it was necessary to pump during the year falls scarcely a million short of what it otherwise would have been. Many of the service pipes were shut off, but many others, in consequence of the masses of debris upon them, could not be reached at a justifiable expense. Unfortunately, the records showing the positions of the taps on the street mains were burnt. As the owners or lessees of lots clear away the rubbish preparatory to rebuilding, the work of stopping leaks becomes much easier.

INLET BASIN.

It has been a question for years what should be done with this dilapidated portion of the works. It is of no use at present, and has not been since the completion of the Lake Tunnel. Were anything to happen to any portion of the Lake Tunnel or Crib that would cut off the supply of water in that direction, it would be necessary to reopen immediately the connection with the Inlet Basin. Until last Winter, several thousand dollars were spent each year in keeping the basin dredged sufficiently, but it was thought safe to omit this last Winter, and rely upon employing a sufficient number of men to open a channel in case of necessity. No such necessity occurred, and it is hoped will not in future.

DISTRIBUTING PIPES.

There were laid during the year ending March 31st, 1872, the following main and distributing pipes, viz.:

SOUTH DIVISION.

On what Street.	Between what Streets.	Length in Feet.	Dia- meter in Inches.
Archer ave.	Market sq. and westward.	212	6
Alley south of Lake st.	Market and Franklin sts.	348	6
Butterfield st.	Twenty-fifth and Twenty-sixth sts.	620	4
Buddan st.	Twenty-ninth and Thirtieth sts.	500	6
Burnside st.	Thirty-third st. and southward.	520	4
Calumet ave.	Twenty-ninth and Thirty-first sts.	1,280	6
Colfax ave.	Thirty-second st. and southward.	243	6
Clark st.	Lake and South Water sts.	43	8
Church st.	Fuller st. and southward.	228	4
Forest ave.	Thirty-first and Thirty-fifth sts.	2,372	6
Grove st.	Seventeenth and Twentieth sts.	922	6
Indiana ave.	Twelfth and Thirteenth sts.	330	4
Indiana ave.	Thirty-fifth st. and southward.	400	6
Johnson ave.	Twenty-seventh st. and southward.	190	4
Logan st.	Hickory st. and southward.	404	6
La Salle st., (E. side.)	Lake st. and southward.	391	4
La Salle st., (W. side.)	South Water st. and southward.	198	6
La Salle st.	Lake st. and northward.	600	8
La Salle st.	In River Tunnel and approaches.	901	36
La Salle st.	Randolph and South Water sts.	730	36
Lake st.	Market st. and eastward.	197	8
Lake st.	La Salle and Clark sts.	427	16
Michigan ave.	Thirty-third and Thirty-fifth sts.	1,017	6
Michigan ave.	South Water and River sts.	564	6
Myrick ave.	Twenty-ninth st. and northward.	204	4
Mulligan st.	Jones st. and eastward.	200	4
Prairie ave.	Thirty-fifth and Thirty-sixth sts.	650	6
Quincy st.	Clark and Wells sts.	782	6
Rhodes ave.	Thirty-second st. and southward.	130	6
River st.	Michigan ave. and westward.	211	6
South Water st.	Across La Salle st.	64	6
Sheridan place.	Purple st. and Wentworth ave.	640	4
Sixteenth st.	Grove and Arnold sts.	394	6
Seventeenth st.	Grove and Burnside sts.	1,207	6
Twenty-fourth st.	Calumet and Wabash aves.	1,592	6
Taylor st.	Third ave. and Griswold st.	770	6
Twentieth st.	State st. and South Park ave.	2,343	6
Twentieth st.	Archer and Wentworth aves.	726	6
Thirtieth st.	South Park av. and eastward.	60	6
Carried forward, . .		23,610	

On what Street.	Between what Streets.	Length in Feet.	Dia- me- ter in Inches.
	Brought forward, . . .	23,610	
Thirtieth st.	Wabash and Michigan aves.	528	4
Thirty-first st.	Cottage place and Dakotah ave.	252	6
Thirty-second st.	Cottage Grove and South Park aves.	1,132	8
Thirty-third st.	Across South Park ave.	108	6
Thirty-fourth st.	Across South Park ave.	84	6
Thirteenth st.	State st. and Michigan ave.	730	4
Thirteenth st.	Michigan and Indiana aves.	330	6
Twenty-seventh st.	South Park and Johnson aves.	915	6
Twenty-ninth st.	Prairie and Cottage Grove aves.	1,466	8
Twenty-fifth st.	Prairie and Michigan aves.	790	6
Vernon ave.	Thirty-fifth st. and southward.	213	4
Wentworth ave.	Eighteenth and Nineteenth sts.	345	4
		30,503	
	Hydrants,	569	
	Total,	31,072	

WEST DIVISION.

On what Street.	Between what Streets.	Length in Feet.	Dia- me- ter in Inches.
Ada st.	Indiana st. and southward.	48	6
Adams st.	Ashland av. and Paulina st.	445	6
Adams st.	Honore and Robey sts.	1,040	6
Adams st.	Leavitt st. and westward.	200	6
Adams st.	Perch st. and eastward.	146	6
Augusta st.	Rumsey and Samuel sts.	676	6
Augusta st.	Elston road and westward.	330	6
Armour st.	Hubbard and Kinzie sts.	358	6
Brown st.	Across Canalport ave.	124	6
Brown st.	Wright st. and southward.	617	4
Blue Island ave.	Catherine st. and southwest.	1,090	6
Blair st.	Canalport ave. and southward.	554	4
Bloomingtondale road	Edgar st. and westward.	340	6
Bryant place	Lake and Randolph sts.	370	6
Blackhawk st.	Across Reuben st.	80	6
Brigham st.	Across Reuben st.	38	6
Blanch st.	Across Reuben st.	53	6
City pipe yard	Putnam st. and eastward.	152	4
Canal st.	Across Fulton st.	44	4
Cleaver st.	Milwaukee ave. and northward.	60	4
Chicago ave.	Union st. and eastward.	60	6
Chicago ave.	East Line Putnam st. and eastward.	150	6
Canalport ave.	Morgan st. and eastward.	306	6
Clybourne place	Wood st. and westward.	616	6
Coventry st.	Bloomingtondale road and Clybourn place.	716	4
Coventry st.	Bloomingtondale road and North ave.	1,593	6
Crossing st.	Elston road and Ridgville road.	860	4
Division st.	Paulina and Lincoln sts.	1,124	8
Depuyster st.	Halsted st. and eastward.	93	4
Dorman court.	Jefferson and Blair sts.	375	4
English st.	John st. and westward.	92	6
Erie st.	Paulina st. and westward.	181	4
Erie st.	Wood and Robey sts.	1,200	4
Erie st.	Halsted st. and eastward.	60	4
Edgar st.	Bloomingtondale road and Clybourn place.	665	4
Fox place	Noble st. and Elston road.	511	4
Fourth st.	Robey and Wood sts.	1,411	6
Fourth st.	Halsted st. and eastward.	67	6
Front st.	Halsted st. and westward.	38	6
Fulton st.	Western ave. and Valentine st.	1,090	6
Fisk st.	Luke and Twenty-second sts.	1,514	6
Ferdinand st.	Noble st. and westward.	362	4
Green st.	Chicago ave. and northward.	50	4
Hoyne st.	Madison st. and northward.	62	8
Hoyne st.	Across Washington st.	112	8
Hoyne st.	Across Warren ave.	107	8
Hoyne st.	Hubbard st. and northward.	176	8
Henry st.	Centre and Blue Island aves.	167	4
Hastings st.	Centre and Blue Island aves.	298	4
Halsted st.	Pratt st. and North Branch Chicago river.	770	6
Indiana st.	Milwaukee ave. and westward.	40	6
Jane st.	Across Milwaukee ave.	60	4
Carried forward, . .		21,691	

On what Street.	Between what Streets.	Length in Feet.	Dia- meter in Inches.
	Brought forward, . .	21,691	
Johnson st.	Wright st. and the C., B. & Q. R. R.	478	6
John st.	Canalport ave. and southward.	66	6
Julian st.	Across Reuben st.	38	6
Jackson st.	Ashland and Southwestern aves.	960	8
Loomis st.	Jackson st. and northward.	181	6
Loomis st.	Monroe and Adams sts.	340	6
Lincoln st.	Across Washington st.	102	6
Lincoln st.	Across Warren ave.	100	6
Morgan st.	Across Chicago ave.	77	6
Morgan st.	Twenty-second st. and northward.	62	8
Mather st.	Desplaines st. and westward.	448	6
Milwaukee ave.	Paulina st. and westward.	1,710	6
Monroe st.	Wood and Paulina sts.	706	4
McAlister st.	Lytle and Sibley sts.	545	4
Meridian st.	Desplaines and Halsted sts.	781	4
McReynolds st.	Across Reuben st.	40	6
Newberry ave.	Twelfth st. and northward.	180	4
Noble st.	Hubbard and Indiana sts.	398	6
North ave.	Noble st. and Ridgville road.	1,671	8
Newton st.	Division and Jane sts.	381	4
Oakley st.	Across Madison st.	80	6
Putnam st.	Chicago ave. and southward.	65	4
Page st.	Across Washington st.	112	8
Page st.	Across Warren ave.	123	8
Paulina st.	Emily and Division sts.	812	6
Paulina st.	Adams st. and southward.	103	6
Perch st.	Adams st. and northward.	278	4
Perch st.	Fulton st. and northward.	483	4
Peoria st.	Madison and Washington sts.	501	6
Phillips st.	Fay st. and eastward.	214	6
Ridgley st.	Halsted st. and westward.	34	6
Robey st.	Across Washington st.	102	6
Robey*st.	Across Warren av.	98	6
Rose st.	Chicago ave. and northward.	334	6
Rucker st.	Chicago ave. and Second st.	615	6
Rebecca st.	Across Blue Island ave.	160	4
Reuben st.	Blackhawk and Keenon sts.	1,005	16
Seeley st.	Across Madison st.	60	6
Sangamon st.	Across Chicago ave.	80	6
Southwestern ave.	Across Adams st.	128	6
Southwestern ave.	Randolph st. and southward.	74	6
Sholto st.	Harrison st. and southward.	240	4
Sixteenth st.	Across Blue Island ave.	134	8
String st.	Canalport ave. and southward.	108	4
Sheldon st.	Randolph st. and northward.	46	4
Tyler st.	Across Green st.	108	6
Tyler st.	Across Clinton st.	86	6
Throop st.	Blue Island ave. and southward.	74	6
Twenty-second st.	Blue Island ave. and eastward.	834	6
Van Buren st.	Ashland ave. and westward.	369	6
Wood st.	Across Adams st.	96	8
Wood st.	Across Monroe st.	6	8
Wood st.	Across Washington st.	84	6
Wood st.	Across Warren ave.	75	6
Wood st.	Hubbard and Indiana sts.	398	8
Western ave.	Lake st. and Park ave.	274	8
	Carried forward, . .	39,297	

On what Street.	Between what Streets.	Length in Feet.	Dia- meter in Inches.
Wilcox st. Warren ave.	Brought forward, . .	39,297	
	Western ave. and westward.	322	6
	Western ave. and westward.	611	4
		40,230	
	Hydrants,	1,269	
	Total,	41,499	

NORTH DIVISION.

On what Street.	Between what Streets.	Length in Feet.	Dia- meter in Inches.
Arthur st.	North ave. and Schiller st.	1,240	4
Blackhawk st.	Larrabee st. and eastward.	100	6
Burling st.	Centre st. and southward.	432	4
Bissel st.	Willow and Centre sts.	633	4
Crosby st.	Larrabee st. and northwest.	190	6
Crosby st.	Division st. and southward.	100	6
Dayton st.	North ave. and Willow sts.	350	6
Elm st.	Market st. and westward.	130	6
Elm st.	Across Larrabee st.	154	6
Eugenia st.	Wells and La Salle sts.	354	4
Goethe st.	Clark st. and eastward.	100	8
Hawthorne ave.	Larrabee st. and northwest.	90	6
Hawthorne ave.	Across Division st.	115	6
Hinsdale st.	Market st. and eastward.	130	4
Hinsdale st.	State and Cass sts.	326	4
Hills st.	Market st. and westward.	82	6
Halsted st.	Division st. and southward.	58	8
Halsted st.	Belden and Fullerton aves.	650	6
Howe st.	Sophia st. and southward.	392	4
Indiana st.	St. Clair st. and Lake Michigan.	732	4
Kingsbury st.	Ontario and Superior sts.	791	8
Larrabee st.	Willow st. and northward.	40	8
Lincoln place	Webster ave. and southward.	240	4
La Salle st.	Ontario and North Water sts.	1,680	36
North ave.	Clark and Dearborn sts.	210	8
Orchard st.	Centre st. and northward.	360	6
Ontario st.	Market and Kingsbury sts.	1,135	8
Oak st.	Clark and Dearborn sts.	182	8
Pine st.	Chicago ave. and Hinsdale st.	525	6
Pearson st.	East end of pipe and Lake Michigan.	100	4
Pearson st.	Into Water Works lot.	107	4
Roberts st.	Chicago ave. and southward.	300	8
Rush st.	Across Ontario st.	135	8
Superior st.	St. Clair st. and Lake Michigan.	135	4
Superior st.	Roberts and Kingsbury sts.	377	8
Sedgwick st.	Chicago ave. and Erie st.	950	6
Sophia st.	Orchard and Burling sts.	400	6
Sophia st.	Howe st. and Lincoln ave.	960	6
Townsend st.	Erie st. and Chicago ave.	900	6
Townsend court	North ave. and southward.	254	4
Weed st.	Clybourn ave. and northward.	213	4
Willow st.	Larrabee st. and westward.	90	8
Willow st.	Bissel and Dayton sts.	200	6
White st.	Sedgwick st. and westward.	400	6
Washington park	Clark st. and eastward.	200	4
Wendel st.	Market st. and westward.	74	6
		17,316	
	Hydrants,	1,242	
	Total,	18,558	

The whole length of pipe laid in the city during the year was 91,129 feet= $17\frac{1389}{5280}$ miles, a little over two miles of which was on streets in which the increased demand for water rendered it necessary to lay larger pipes than those already in the ground.

PIPES TAKEN UP OR ABANDONED.

The following is a list of pipes which during the year were taken up out of the ground, or abandoned as not being worth the amount it would cost to take them up, where larger ones were laid.

Abandoned or Taken up.	Location of Pipes.	Length in feet.	Dia- meter in Inches.
Taken up.	Canal st. from Fulton st. northward.	44	3
do	Carpenter st. from Chicago ave. southward.	12	4
do	Noble st. across Milwaukee ave.	14	4
do	Ontario st. from Market st. westward.	14	4
do	Warren ave. from Page st. westward.	13	4
do	Wood st. across Washington st.	84	4
do	Wood st. across Warren ave.	75	4
Abandoned.	Lake st. bet. La Salle and Market sts.	1,163	4
Taken up.	Fry st. from Chicago ave. northward.	58	4
do	Michigan ave. from South Water st. northward.	410	4
do	Kingsbury st. from Erie st. northward.	260	4
do	Reuben st. from Blackhawk st. southward.	80	6
do	Harrison st. bet. Sholto and Centre ave.	1,027	6
do	Green st. bet. Monroe and Tyler sts.	1,626	4
do	Harrison st. bet. Halsted and Sangamon sts.	1,025	6
do	Harrison st. bet. Sangamon and Morgan sts.	126	8
do	Twenty-fourth st. bet. Michigan and Indiana aves.	287	4
do	Twenty-fourth st. bet. Prairie and Calumet aves.	366	4
Abandoned.	Ontario st. bet. Market and Kingsbury sts.	1,135	4
Taken up.	Twenty-seventh st. bet. Cottage Grove & Johnson aves.	600	4
Abandoned.	Quincy st. bet. Wells and Clark sts.	782	4
Taken up.	Twenty-ninth st. bet. Cottage Grove and Prairie aves.	1,540	4
	Total,	10,741	

The total length of pipes laid in the city, to April 1st, as nearly as can be ascertained, is as follows, viz.:

30-inch wrought-iron river pipe, State street,	280 feet.
24 " " " " " Rush " . . .	530 "
24 " " " " " Twelfth " . . .	258 "
36 " cast-iron main "	3,311 "
28 " " " " "	160 "
24 " " " " "	56,788 "
16 " " " " "	32,772 "
12 " " " " "	34,281 "
10 " " " " "	7,862 "
8 " " " " "	173,636 "
6 " " " " "	557,417 "
4 " " " " "	623,874 "
3 " " " " "	27,772 "
	<hr/>
	1,518,941 "

Or 287 miles and 3,581 feet.

Owing to the fire, which destroyed the derricks and most of the implements for laying pipes, and made it necessary for a time to employ the whole available force in stopping leaks. the laying of the 36-inch main was suspended, but will no doubt be completed as soon as the new engine is ready to work. If this pipe could be extended south to Adams street, and there connect with the 16 and 12-inch mains, its usefulness would be nearly, if not quite, doubled.

QUALITY OF WATER.

This continued to be quite as good to the eye and the taste as in former years, so far as it was obtained from the lake. Shortly after the fire, several Artesian wells were connected with the distributing pipes. The supply afforded by this means was a great relief to those who had no water. Owing to peculiar circumstances, the small part of the North Division that was spared by the flames continued to be supplied in this way for about a month. By that time, the inhabitants of that portion of the city thus supplied became very much dissatisfied with the artesian well water, and desired greatly to have the supply from the lake restored to them, which was done, much to their satisfaction. This experiment, it is believed, settles beyond all doubt, if any existed before, that Artesian well water, such as can be obtained from beneath the city, would not be acceptable to the inhabitants for domestic purposes. It not only injured boilers, but became very disagreeable in taste to many who were compelled to use it.

HYDRANTS.

DURING the year ending March 31st, 1872, the following new hydrants were established, viz :

SOUTH DIVISION.

- One southwest corner of alley north of South Water street and Michigan avenue.
- One south side of alley 500 feet south of Twenty-second street, 200 feet east of Cottage Grove avenue.
- One at the Douglas Hose House.
- One southwest corner Forest avenue and Thirty-third street.
- One southwest corner La Salle and South Water streets.
- One northwest corner Lake and La Salle streets.
- One northwest corner Michigan avenue and South Water street.
- One northwest corner Michigan avenue and Thirty-fifth street.
- One northwest corner Michigan avenue and Thirtieth street.
- One northwest corner Prairie avenue and Thirty-fifth street.
- One northeast corner Quincy street and Fifth avenue.
- One northwest corner Quincy and La Salle streets.
- One northwest corner South Park avenue and Thirty-second street.
- One northeast corner South Park avenue and Thirty-fourth street.
- One northwest corner Twentieth street and Indiana avenue.
- One northwest corner Twentieth street and Prairie avenue.
- One northeast corner Twenty-second and Grove streets.
- One northwest corner Twenty-fourth street and Indiana avenue.
- One northwest corner Twenty-ninth street and Calumet avenue.
- One northwest corner Twenty-seventh street and Johnson avenue.
- One northwest corner Twenty-seventh street and Broadway place.

Total in South Division, 21

WEST DIVISION.

- One northeast corner Blue Island avenue and Rebecca street.
- One northwest corner Blair street, and Dorman court.
- One northeast corner Crossing street and Ridgville Road.
- One northeast corner Canalport avenue and Brown street.
- One north side Canalport avenue, between Morgan and Brown streets.
- One northwest corner Carpenter and Randolph streets.
- One northwest corner Clinton and Tyler streets.
- One north side Depuyster street, 350 feet east of Halsted street.
- One northwest corner Fulton and Canal streets.
- One northwest corner Fulton and Valentine streets.
- One northwest corner Fourth and Robey streets.
- One southwest corner Fisk and Luke streets.
- One northwest corner Fisk and Clayton streets.
- One northwest corner Fifteenth and Brown streets.
- One northwest corner Green and Madison streets.
- One northwest corner Green and Randolph streets.
- One northwest corner Harrison and Green streets.
- One northwest corner Harrison and Sangamon streets.
- One northwest corner Harrison and Morgan streets.
- One north side Jackson street, between Halsted and Desplaines streets.
- One northwest corner Jackson street and Marshfield avenue.
- One northwest corner Jackson and Paulina streets.
- One southwest corner John street and Canalport avenue.
- One southwest corner Jane streets and Milwaukee avenue.
- One southwest corner Loomis and Jackson streets.
- One northeast corner Lincoln street and Warren avenue.
- One northwest corner Monroe and Desplaines streets.
- One northwest corner McAlister place and Sibley street.
- One northwest corner Monroe and Wood streets.
- One north side Mather street, 428 feet west of Desplaines street.
- One Southwest corner Newton and Division streets.
- One northwest corner North avenue and Reuben street.
- One southwest corner Peoria and Washington streets.
- One Northwest corner Price place and Desplaines street.
- One southwest corner Pratt and Halsted streets.
- One northwest corner Paulina street and Warren avenue.
- One west side Perch street, 278 feet north of Jackson street.
- One northwest corner Randolph and May streets.
- One southwest corner Seeley and Madison streets.
- One northeast corner Sixteenth street and Blue Island avenue.

One southwest corner Stephenson and Lumber streets.
 One northwest corner Twelfth and Newberry streets.
 One northeast corner Twenty-second street and Blue Island avenue.
 One northwest corner Van Buren street and Marshfield avenue.
 One northwest corner Will street and Milwaukee avenue.
 One northeast corner Warren avenue and Robey street.
 One northwest corner Wood and Washington streets.
 One northwest corner Wood and Adams streets.

Total in the West Division, 48

NORTH DIVISION.

One west side Arthur street, between North avenue and Schiller street.
 One southwest corner Arthur street and North avenue.
 One northwest corner Arthur and Schiller streets.
 One north side Blackhawk street, between Clybourn avenue and Larrabee st.
 One northwest corner Bissel and Willow streets.
 One northwest corner Chicago avenue and Townsend street.
 One northeast corner Cass and Ohio streets.
 One northwest corner Dearborn and Ontario streets.
 One northeast corner Erie and Cass streets.
 One northeast corner Eugenia and Wells streets.
 One at Engine House, City Water Works.
 One northwest corner Franklin and Menomonee streets.
 One northeast corner Franklin and Michigan streets.
 One northwest corner Huron and Townsend streets.
 One southwest corner Halsted street and Fullerton avenue.
 One northwest corner Halsted street and Belden avenue.
 One southeast corner Halsted and Centre streets.
 One northwest corner Hinsdale and Cass streets.
 One southwest corner Howe and Sophia streets.
 One southeast corner Illinois and Rush streets.
 One northeast corner Illinois and Cass streets.
 One northeast corner Illinois and State streets.
 One northwest corner Illinois and St. Clair streets.
 One northeast corner Kinzie and State streets.
 One northeast corner Kinzie and Clark streets.
 One northwest corner Kinzie and Market streets.
 One northwest corner La Salle and Indiana streets.
 One northwest corner La Salle and Ontario streets.
 One east side Larrabee street opposite Crosby street.
 One east side Larrabee street opposite Hickory street.

One northwest corner Mohawk and Menomonee streets.
 One northeast corner Michigan and Rush streets.
 One northeast corner Michigan and Dearborn streets.
 One northeast corner Michigan and Kingsbury streets.
 One north side Ontario street, 312 feet west of Market street.
 One northeast corner Ontario and Kingsbury streets.
 One at end of pipe on Pearson street, near Lake Michigan.
 One northeast corner Rush and Ohio streets.
 One northwest corner Superior and Franklin streets.
 One northeast corner Superior and Dearborn streets.
 One southeast corner Superior and Clark streets.
 One northwest corner Superior and State streets.
 One northeast corner Sophia and Burling streets.
 One north side Sophia street, between Larrabee street and Lincoln avenue.
 One west side Townsend street, between Oak and White streets.
 One southwest corner White and Pine streets.

Total in North Division, 46

In all, 115, which together with those previously in would give a total of 1,667 hydrants in the city at this date. During the year 386 hydrants were renewed and 421 received more or less repairs; and in 4,323 instances hydrants were found frozen, and thawed out during the past winter.

The extraordinary number of hydrants found frozen during the past Winter was owing to the peculiar condition in which the fire left a large portion of the city. The "areas" or spaces under the sidewalks, which were very numerous in the burnt district, were left entirely exposed either by the burning or falling in of the sidewalks. The protection of the hydrants from frost, supposed to have been in a great measure secure before, at a considerable trouble and expense, was rendered useless. Every effort was made to keep the hydrants in a condition to be used in case of fire, and, considering all the circumstances, with good success.

The largely increased height and value of buildings recently erected in the city calls for more hydrants. A commencement was made to meet this demand by putting in a few larger ones with three nozzles each, but the want of funds permitted but a few to be established. Most of these were put in on Lake street.

STOP-COCKS.

The following stop-cocks were established during the year, viz.:

SOUTH DIVISION.

- One 4-inch, Arnold street, south line of Twenty-ninth street.
- One 8-inch, Adams street, east line of State street.
- One 8-inch, Adams street, east line of Fifth avenue.
- One 4-inch, Burnside street, south line of Twenty-ninth street.
- One 4-inch, Burnside street, south line of Thirty-third street.
- One 4-inch, Butterfield street, south line of Twenty-ninth street.
- One 6-inch, Buddan street, south line of Twenty-ninth street.
- One 8-inch, Clark street, north line of Lake street.
- One 8-inch, Clark street, south line of Van Buren street.
- One 4-inch, Congress street, east line of State street.
- One 6-inch, Cottage Grove avenue, south line of Thirty-third street.
- One 4-inch, Eldridge court, east line of State street.
- One 4-inch, Fifth avenue, south line of Van Buren street.
- One 6-inch, Franklin street, south line of Van Buren street.
- One 6-inch, Forest avenue, south line of Thirty-third street.
- One 6-inch, Forest avenue, south line of Thirty-first street.
- One 4-inch, Fourth avenue, south line of Van Buren street.
- One 4-inch, Griswold street, south line of Van Buren street.
- One 6-inch, Grove street, south line of Eighteenth street.
- One 4-inch, Harrison street, east line of State street.
- One 4-inch, Harrison street, east line of Fifth avenue.
- One 4-inch, Harmon court, east line of State street.
- One 4-inch, Haddock place, east line of Fifth avenue.
- One 6-inch, Indiana avenue, south line of Thirty-first street.
- One 4-inch, Jackson street, east line of State street.
- One 8-inch, La Salle street, in the River Tunnel. (Blow off.)
- One 4-inch, La Salle street, south line of Lake street.
- One 8-inch, La Salle street, south line of Lake street.
- One 4-inch, Lake street, east line of State street.
- One 16-inch, Lake street, east line of La Salle street.
- One 4-inch, Myrick avenue, south line of Twenty-ninth street.
- One 4-inch, Monroe street, east line of State street.

One 4-inch, Monroe street, east line of Fifth avenue.
 One 6-inch, Madison street, east line of Fifth avenue.
 One 8-inch, Madison street, east line of State street.
 One 4-inch, Market street, south line of Van Buren street.
 One 4-inch, Michigan avenue, south line of Van Buren street.
 One 4-inch, Peck court, east line of State street.
 One 8-inch, Polk street, east line of Fifth avenue.
 One 4-inch, Quincy street, east line of Fifth avenue.
 One 6-inch, Quincy street, east line of Fifth avenue.
 One 6-inch, Randolph street, east line of State street.
 One 6-inch, Randolph street, east line of Fifth avenue.
 One 4-inch, South Water street, east line of State street.
 One 6-inch, South Water street, east line of Fifth avenue.
 One 8-inch, State street, south line of Twenty-ninth street.
 One 4-inch, State street, south line of Van Buren street.
 One 4-inch, Sherman street, south line of Van Buren street.
 One 6-inch, South Park avenue, south line of Thirty-third street.
 One 4-inch, Third avenue, south line of Van Buren street.
 One 6-inch, Taylor street, east line of Clark street.
 One 6-inch, Twenty-fourth street, east line of Michigan avenue.
 One 6-inch, Twenty-fourth street, east line of Prairie avenue.
 One 6-inch, Twentieth street, east line of Wentworth avenue.
 One 6-inch, Twentieth street, east line of Clark street.
 One 6-inch, Twentieth street, east line of State street.
 One 6-inch, Twentieth street, east line of Prairie avenue.
 One 6-inch, Twentieth street, east line of Michigan avenue.
 One 4-inch, Twenty-third street, east line of Prairie avenue.
 One 6-inch, Twenty-second street, east line of Prairie avenue.
 One 6-inch, Thirteenth street, east line of Michigan avenue.
 One 6-inch, Thirty-fifth street, east line of Cottage Grove avenue.
 One 6-inch, Twenty-seventh street, east line of Cottage Grove avenue.
 One 6-inch, Twenty-fifth street, east line of Michigan avenue.
 One 8-inch, Twenty-ninth street, east line of Michigan avenue.
 One 6-inch, Thirty-first street, east line of Prairie avenue.
 One 6-inch, Thirty-first street, east line of Michigan avenue.
 One 4-inch, Thirtieth street, east line of Michigan avenue.
 One 6-inch, Van Buren street, east line of State street.
 One 8-inch, Van Buren street, east line of Fifth avenue.
 One 4-inch, Wabash avenue, south line of Van Buren street.
 One 6-inch, Wentworth avenue, south line of Eighteenth street.
 One 4-inch, Washington street, east line of State street.

Total in South Division, 73

WEST DIVISION.

- One 4-inch, Aberdeen street, south line of Taylor street.
- One 4-inch, Ann street, north line of Randolph street.
- One 6-inch, Adams street, west line of Leavitt street.
- One 6-inch, Adams street, west line of Robey street.
- One 6-inch, Adams street, west line of Wood street.
- One 6-inch, Augusta street, west line of Rucker street.
- One 6-inch, Bryan place, north line of Randolph street.
- One 6-inch, Blue Island avenue, south line of Sixteenth street.
- One 4-inch, Brown street, south line of Mitchell street.
- One 4-inch, Brown street, south line of Taylor street.
- One 4-inch, Bunker street, west line of Desplaines street.
- One 6-inch, Blackhawk street, east line of Reuben street.
- One 6-inch, Blackhawk street, west line of Reuben street.
- One 6-inch, Brigham street, west line of Reuben street.
- One 6-inch, Blanche street, east line of Reuben street.
- One 6-inch, Clinton street, north line of Fulton street.
- One 8-inch, Clinton street, north line of Madison street.
- One 6-inch, Clinton street, south line of Taylor street.
- One 4-inch, Clinton street, south line of Harrison street.
- One 4-inch, Canal street, south line of Van Buren street.
- One 4-inch, Canal street, north line of Madison street.
- One 4-inch, Canal street, north line of Fulton street.
- One 6-inch, Canal street, south line of Taylor street.
- One 4-inch, Canal street, south line of Harrison street.
- One 4-inch, Carroll street, west line of Peoria street.
- One 4-inch, Carroll street, west line of Desplaines street.
- One 4-inch, Carroll street, west line of Morgan street.
- One 4-inch, Carroll street, west line of Clinton street.
- One 6-inch, Centre avenue, south line of Taylor street.
- One 4-inch, Coolidge street, west line of Loomis street.
- One 6-inch, Coventry street, north line of North avenue.
- One 4-inch, Coventry street, south line of Clybourn place.
- One 6-inch, Clybourn place, west line of Elston road.
- One 4-inch, Crossing street, west line of Elston road.
- One 4-inch, Dussold street, west line of Jefferson street.
- One 8-inch, Division street, west line of Wood street.
- One 6-inch, Desplaines street, north line of Madison street.
- One 8-inch, Desplaines street, south line of Taylor street.
- One 4-inch, Depuyster street, west line of Desplaines street.
- One 4-inch, Ewing street, west line of Desplaines street.

One 4-inch, Erie street, west line of Wood street.
One 4-inch, Erie street, west line of Robey street.
One 6-inch, Elston road, south line of Clybourn place.
One 4-inch, Fulton street, west line of Clinton street.
One 4-inch, Fulton street, west line of Morgan street.
One 6-inch, Fulton street, west line of Western avenue.
One 4-inch, Fulton street, west line of Leavitt street.
One 6-inch, Fourth street, west line of Robey street.
One 6-inch, Fourth street, west line of Wood street.
One 6-inch, Front street, west line of Halsted street.
One 6-inch, Fisk street, south line of Luke street.
One 4-inch, Ferdinand street, west line of Noble street.
One 4-inch, Fry street, west line of Rucker street.
One 6-inch, Forquer street, west line of Clinton street.
One 4-inch, First street, west line of Noble street.
One 4-inch, Green street, north line of Fulton street.
One 4-inch, Green street, north line of Madison street.
One 12-inch, Green street, south line of Van Buren street.
One 4-inch, Green street, north line of Chicago avenue.
One 6-inch, Halsted street, south line of Van Buren street.
One 6-inch, Halsted street, north line of Madison street.
One 6-inch, Halsted street, south line of Taylor street.
One 4-inch, Halsted street, south line of Harrison street.
One 8-inch, Hoyne street, north line of Madison street.
One 12-inch, Harrison street, west line of Morgan street.
One 12-inch, Harrison street, west line of Centre avenue.
One 4-inch, Hastings street, west line of Loomis street.
One 4-inch, Henry street, west line of Centre avenue.
One 6-inch, Hubbard street, west line of Noble street.
One 6-inch, Hubbard street, west line of Wood street.
One 6-inch, Hubbard street, west line of Robey street.
One 6-inch, Hubbard street, west line Leavitt street.
One 6-inch, Indiana street, west line of Milwaukee avenue.
One 4-inch, Indiana street, west line of Noble street.
One 4-inch, Indiana street, west line of Wood street.
One 4-inch, Jefferson street, north line of Madison street.
One 4-inch, Jefferson street, north line of Fulton street.
One 6-inch, Jefferson street, south line of Taylor street.
One 4-inch, Jefferson street, south line of Harrison street.
One 4-inch, Jackson street, west line of Desplaines street.
One 4-inch, Jackson street, west line of Clinton street.
One 6-inch, Jackson street, west line of Robey street.
One 4-inch, Jackson street, west line of Wood street.

One 6-inch, Julian street, west line of Reuben street.
One 4-inch, Johnson street, south line of Taylor street.
One 6-inch, Kinzie street, west line of Desplaines street.
One 4-inch, Kramer street, west line of Jefferson street.
One 4-inch, Kansas street, west line of Loomis street.
One 6-inch, Lake street, west line of Clinton street.
One 6-inch, Leavitt street, north line of Madison street.
One 6-inch, Leavitt street, south line of Van Buren street.
One 6-inch, Lincoln street, north line of Fourth street.
One 4-inch, Mather street, west line of Clinton street.
One 6-inch, Mather street, west line of Desplaines street.
One 8-inch, Madison street, west line of Morgan street.
One 8-inch, Madison street, west line of Desplaines street.
One 8-inch, Madison street, west line of Clinton street.
One 8-inch, Morgan street, north line of Madison street.
One 8-inch, Morgan street, south line of Taylor street.
One 4-inch, Monroe street, west line of Desplaines street.
One 4-inch, Monroe street, west line of Clinton street.
One 4-inch, Monroe street, west line of Wood street.
One 6-inch, Mitchell street, west line of Loomis street.
One 4-inch, Meridian street, west line of Desplaines street.
One 6-inch, McReynolds street, west line of Reuben street.
One 4-inch, May street, south line of Taylor street.
One 4-inch, Newberry avenue, south line of Taylor street.
One 4-inch, Newberry avenue, south line of Mitchell street.
One 4-inch, Nebraska street, west line of Loomis street.
One 4-inch, Newton street, south line of Division street.
One 8-inch, North avenue, west line of Noble street.
One 8-inch, North avenue, west line of Reuben street.
One 8-inch, North avenue, east line of Reuben street.
One 8-inch, Noble street, north line of Blackhawk street.
One 6-inch, Noble street, north line of Milwaukee avenue.
One 4-inch, O'Brien street, west line of Jefferson street.
One 6-inch, Paulina street, south line of Adams street.
One 6-inch, Paulina street, north line of Fourth street.
One 6-inch, Paulina street, south line of Division street.
One 6-inch, Peoria street, north line of Madison street.
One 4-inch, Peoria street, north line of Harrison street.
One 4-inch, Pierce street, west line of Desplaines street.
One 4-inch, Pratt street, west line of Halsted street.
One 4-inch, Putnam street, south line of Chicago avenue.
One 4-inch, Price place, west line of Desplaines street.
One 6-inch, Quincy street, west line of Clinton street.

One 6-inch, Rose street, north line of Chicago avenue.
 One 6-inch, Reuben street, south line of Chicago avenue.
 One 6-inch, Reuben street, north line of Blackhawk street.
 One 6-inch, Randolph street, west line of Morgan street.
 One 4-inch, Randolph street, west line of Desplaines street.
 One 4-inch, Randolph street, west line of Clinton street.
 One 4-inch, Randolph street, west line of Peoria street.
 One 6-inch, Randolph street, west line of May street.
 One 6-inch, Randolph street, west line of Sheldon street.
 One 6-inch, Ridgley street, west line of Halsted street.
 One 6-inch, Rucker street, north line of Milwaukee avenue.
 One 4-inch, Sangamon street, north line of Harrison street.
 One 4-inch, Sangamon street, north line of Madison street.
 One 6-inch, Sangamon street, south line of Chicago avenue.
 One 4-inch, Sholto street, south line of Taylor street.
 One 4-inch, Second street, west line of Noble street.
 One 4-inch, Second street, west line of Rucker street.
 One 4-inch, Sheldon street, north line of Randolph street.
 One 4-inch, Sebor street, west line of Clinton street.
 One 4-inch, Sampson street, west line of Loomis street.
 One 6-inch, South Western avenue, south line of Adams street.
 One 6-inch, Tyler street, west line of Clinton street.
 One 4-inch, Taylor street, west line of Desplaines street.
 One 6-inch, Taylor street, west line of Loomis street.
 One 8-inch, Twelfth street, west line of Loomis street.
 One 6-inch, Twenty-second street, west line of Loomis street.
 One 6-inch, Van Buren street, west line of Desplaines street.
 One 6-inch, Van Buren street, west line of Clinton street.
 One 6-inch, Van Buren street, west line of Ashland avenue.
 One 8-inch, Wood street, south line of Adams street.
 One 4-inch, Warren avenue, west line of Wood street.
 One 4-inch, Warren avenue, west line of Robey street.
 One 4-inch, Warren avenue, west line of Western avenue.
 One 4-inch, Washington street, west line of Wood street.
 One 4-inch, Washington street, west line of Robey street.
 One 4-inch, Washington street, west line of Desplaines street.
 One 4-inch, Washington street, west line of Clinton street.
 One 4-inch, West Water street, south line of Washington street.
 One 4-inch, Walnut street, west line of Leavitt street.
 One 8-inch, Western avenue, north line of Park avenue.
 One 6-inch, Wilcox avenue, west line of Western avenue.
 One 6-inch, Wabansia avenue, west line of Elston Road.

Total in West Division, 168

NORTH DIVISION.

One 4-inch, Arthur street, south line of North avenue.
One 4-inch, Arthur street, north line of Schiller street.
One 6-inch, Burton place, east line of Clark street.
One 4-inch, Bremer street, south line of Division street.
One 4-inch, Bissel street, north line of Willow street.
One 6-inch, Crosby street, west line of Larrabee street.
One 6-inch, Crosby street, south line of Division street.
One 4-inch, Clark street, north line of Ontario street.
One 4-inch, Cass street, north line of Ontario street.
One 4-inch, Dearborn street, north line of Ontario street.
One 6-inch, Division street, east line of Clark street.
One 6-inch, Division street, west line of Larrabee street.
One 6-inch, Elm street, west line of Market street.
One 6-inch, Elm street, west line of Larrabee street.
One 4-inch, Elm street, east line of Clark street.
One 6-inch, Eugenia street, west line of Sedgwick street.
One 4-inch, Franklin street, north line of Schiller street.
One 4-inch, Franklin street, north line of Menomonee street.
One 8-inch, Goethe street, east line of Clark street.
One 4-inch, Hinsdale street, west line of Market street.
One 4-inch, Hinsdale street, east line of State street.
One 6-inch, Hills street, west line of Market street.
One 6-inch, Hawthorne avenue, north line of Division street.
One 6-inch, Halsted street, north line of Rees street.
One 4-inch, Hammond street, north line of Menomonee street.
One 6-inch, Hurlbut street, north line of Menomonee street.
One 6-inch, Huron street, east line of Clark street.
One 4-inch, Huron street, west line of Townsend street.
One 6-inch, Illinois street, east line of Rush street.
One 4-inch, Indiana street, east line of Clark street.
One 6-inch, Kinzie street, east line of Clark street.
One 8-inch, Kinzie street, west line of Market street.
One 6-inch, Kinzie street, west line of Wells street.
One 8-inch, Kingsbury street, north line of Ontario street.
One 6-inch, Larrabee street, north line of Clybourn avenue.
One 6-inch, Larrabee street, north line of Menomonee street.
One 6-inch, Larrabee street, south line of Division street.
One 4-inch, La Salle street, north line of Ontario street.
One 4-inch, Lafayette place, east line of Clark street.
One 4-inch, Market street, south line of Division street.

One 4-inch, Mohawk street, north line of Menomonee street.
 One 4-inch, Maple street, east line of Clark street.
 One 4-inch, Michigan street, east line of Rush street.
 One 4-inch, Michigan street, east line of Clark street.
 One 4-inch, Michigan street, west line of Wells street.
 One 4-inch, Michigan street, west line of Market street.
 One 8-inch, North avenue, east line of Clark street.
 One 4-inch, North Water street, east line of Rush street.
 One 6-inch, Oak street, west line of Market street.
 One 6-inch, Ontario street, east line of Rush street.
 One 8-inch, Ontario street, west line of Dearborn street.
 One 4-inch, Ohio street, east line of Rush street.
 One 4-inch, Ohio street, east line of Clark street.
 One 4-inch, Pearson street, west line of Market street.
 One 4-inch, Pine street, north line of Ontario street.
 One 8-inch, Rush street, north line of Ontario street.
 One 6-inch, Sedgwick street, north line of Schiller street.
 One 6-inch, Sedgwick street, south line of North avenue.
 One 6-inch, Sedgwick street, north line of Menomonee street.
 One 6-inch, Sedgwick street, south line of Chicago avenue.
 One 6-inch, State street, north line of Ontario street.
 One 4-inch, Superior street, east line of Clark street.
 One 4-inch, Superior street, east line of Rush street.
 One 4-inch, Superior street, west line of Townsend street.
 One 6-inch, Sophia street, west line of Larrabee street.
 One 4-inch, Towns court, south of North avenue.
 One 6-inch, Townsend street, south line of Chicago avenue.
 One 4-inch, Whiting street, west of Market street.
 One 4-inch, White street, west of Market street.
 One 6-inch, White street, west line of Sedgwick street.
 One 6-inch, Wendel street, west of Market street.
 One 8-inch, Willow street, west line of Larrabee street.
 One 8-inch, Wells street, north line of Ontario street.
 One 4-inch, Wesson street, south line of Division street.
 One 4-inch, Washington Park, east line of Clark street.

Total in North Division, 75

In all 516, which together with those previously put in, would make 1,392 stop-cocks of all sizes in the city April 1st, 1872. Thirty-one were repaired during the year and nine renewed.

The work of subdividing the previously very large stop-cock districts was continued until last spring, when, owing to limited funds,

it was very much diminished, and comparatively little was done towards it during the year. The benefit of what has been done is very great, but is scarcely appreciated, except by those in the immediate charge of the work. The complaints of water being cut off for hours from important districts are far less numerous than they were years ago. The ability to let the water on, or shut it off from, a small district at a time, just after the fire, was of great value.

LAKE TUNNEL.

This work, so far as is known, is in good order throughout, under water and ground. The slight temporary structures connected with it above ground, on the land end, were destroyed by fire, and the portion of the Crib above water, though two miles from the nearest part of the burnt district, would have been burnt in consequence of live coals carried to it by the wind had not the keeper watched them during the night and extinguished them.

The present Crib, being composed so largely of wood, is not only combustible but perishable above water. The timbers in the interior of the Crib are beginning to decay, and the permanent structure it has always been intended should be erected there, ought to be commenced soon. Plans and specifications for this structure are now being prepared.

PROPOSED NEW WATER WORKS.

Although the first impression made by the fire was that the consumption of water would be materially checked, and consequently the necessity for the immediate commencement of the new works much diminished, it is very probable now that before they can be constructed the consumption of water by the whole city will be about as great as it would have been had there been no fire. Should this be realized, then according to the estimates and statements on pages 66 and 67 of the last (Tenth) Annual Report, it will be seen that the estimated capacity of the Lake Tunnel will be taxed to its utmost to supply the city during the hottest days of the Summer of 1875. Fortunately, the actual capacity of the Lake Tunnel for delivering water is greater than was estimated, and it is to be hoped that the demand for water may be somewhat diminished by checking the enormous waste now so common in all large cities so liberally supplied as this is.

As already stated, no large city, especially one like ours, without a large elevated reservoir and without suitable ground on which to build one, should be entirely dependent upon one set of pumping works.

SEWERAGE.

CHICAGO, March 31, 1872.

TO E. S. CHESBROUGH, ESQ., *City Engineer*:

Herewith is submitted my annual report of work done by the Sewerage Department for the year ending with date.

About nine and three-fifth miles of sewers of all sizes have been laid during the past year, at an expense of \$123,878.92, which was about one-half the amount contemplated, the sewerage construction tax having been reduced one-half after the fire of October, '71.

In consequence of the loss of all my returns of the work done, by the fire, I have not been able to give the details as to the cost of the sewers of the various sizes, and the report is in some other respects not as complete as usual. The loss of all the plans and records of the sewers by that disaster seriously embarrasses the operations of this department, and surveys, both of the plan and elevation of the sewers as well as of the topography of the ground, have been commenced, and new plans are being prepared. The former general plans showed the location of every private drain which had been connected with the sewers, which were surveyed and platted when they were laid in, and these plans can never be restored in their original completeness. The loss of our notes of the side-junctions, which were built into the sewers, is also a serious disaster, especially of those in the pipe-sewers, which are inaccessible from within. The only injury to the sewers by the fire was the burning to a greater or less degree of the wooden covers of the man-holes and catch-basins, many of which have been, and will have to be, restored.

It will be observed that the cost of cleansing the sewers was about \$4,000 less during the past year than the year previous. This was

owing to the fact that no flushing was done after the fire, the machinery having been destroyed, and because since the fire the cleaning parties have been obliged to confine their work to those sewers where, on account of extensive building operations, much dirt has passed into the sewers. In my opinion, a large amount of cleansing throughout the city will be indispensable during the present year.

Yours respectfully,

WILLIAM H. CLARKE,

Principal Assistant Engineer.

LENGTH IN FEET OF SEWERS BUILT TO APRIL 1, 1872.

Diameter in Feet.	South Division.		West Division.		North Division.		Totals, Three Divisions.			
	Previous to April 1, 1871.	From April 1, 1871, to April 1, 1872.	Previous to April 1, 1871.	From April 1, 1871, to April 1, 1872.	Previous to April 1, 1871.	From April 1, 1871, to April 1, 1872.	Totals, Previous to Apr. 1, 1871.	Totals, April 1, 1871, to April 1, 1872.	Total Sewers built up to Apr. 1, 1872.	Average Cost per Foot in 1870-1871
6	2,408		1,292		3,895		7,595		7,595	
5	6,036		35,030	4,381	13,756		54,822	4,381	59,203	\$5.68
4 1/2	2,349		39,292	1,428	9,615		51,256	1,428	52,684	
4	5,400		39,117		7,053		51,570		51,570	4.63
3 1/2	912		9,556				10,468		10,468	5.02
3	23,941	1,436	13,270		9,169		46,380	1,436	47,816	4.45
2 1/2	50,622	4,857	4,294	543	16,390		71,306	5,400	76,716	2.89
2 1/4	6,359						6,359		6,359	
2	60,718	6,493	117,811	7,657	78,412	2,251	256,941	16,401	273,342	2.01
1 1/4					388	469	388	469	857	2.19
1	95,352	7,818	87,970	3,785	755	9,598	243,077	21,201	264,278	1.49
	254,097	20,604	347,632	17,794	198,433	12,318	800,162	50,716	850,878	Avg. Cost per Foot in 1871-1872
	274,701		365,426		210,751		151,288 282 5280 Miles.	9,3196 Miles.	161,798 5280 Miles.	\$2.44

CATCH-BASINS AND MAN-HOLES BUILT.

Built from April 1, 1871, to April 1, 1872.				Previously Built.	Total.	Average Cost.
	S. Division.	W. Division.	N. Division.			
Catch Basins, . . .	67	112	98	4,529	4,806	\$81.25
Man-holes, . . .	151	111	95	4,803	5,180	15.30

DETAILED STATEMENT OF SEWERS BUILT FROM
APRIL 1st, 1871, TO APRIL 1st, 1872.

SOUTH DIVISION.

Location.			Length in Feet of Sewers Built.			
On what Street.	From	To	3 ft.	2½ ft.	2 ft.	1 ft.
Quarry st. . . .	Chicago River	Archer ave. . . .	1,105			
Archer ave. . . .	Chicago River	Pitney st. . . .	275			
Archer ave. . . .	Pitney st. . . .	Lock st. . . .		583		
Wabash ave. . . .	Thirty-fifth st. . . .	Thirty-third st. . . .		1,363		
Michigan ave. . . .	Thirty-fifth st. . . .	Thirty-third st. . . .		1,364		
Indiana ave. . . .	Thirty-fifth st. . . .	Thirty-third st. . . .		1,367		
Archer ave. . . .	Lock st. . . .	Arch st. . . .			549	
Archer ave. . . .	Salt st. . . .	114 ft. west of Mary st. . . .			1,060	
Northern ave. . . .	Cottage Grove ave. . . .	Johnson ave. . . .			598	
Wabash ave. . . .	Thirty-third st. . . .	Thirty-first st. . . .			1,329	
Michigan ave. . . .	Thirty-third st. . . .	Thirty-first st. . . .			1,329	
Indiana ave. . . .	Thirty-third st. . . .	Thirty-first st. . . .			1,328	
Grove st. . . .	210 ft. N. E. of Archer ave. . . .	Stewart ave. . . .				1,638
Myrick ave. . . .	Twenty-ninth st. . . .	Thirtieth st. . . .				875
Twenty-third st. . . .	State st. . . .	South Park ave				1,795
Twenty-fourth st. . . .	197' west of Michigan ave. . . .	Prairie ave. . . .				721
Twenty-eighth st. . . .	State st. . . .	Wabash ave. . . .				400
Calumet ave. . . .	Twenty-first st. . . .	Twenty-first st. . . .				405
Wabash ave. . . .	Thirty-first st. . . .	Thirtieth st. . . .				388
Michigan ave. . . .	Thirty-first st. . . .	Thirtieth st. . . .				388
Indiana ave. . . .	Thirty-first st. . . .	Thirtieth st. . . .				388
Carried forward, . . .			1,380	4,677	6,193	6,998

WING SEWERS ACROSS STREETS TO BE PAVED.

Location.			Length in Feet of Sewers Built.			
On what Street.	From	To	3 ft.	2½ ft.	2 ft.	1 ft.
Thirty-fifth st. . .	Thirty-fifth st. Sewer	Brought forward, . .	1,380	4,677	6,193	6,998
Thirty-fifth st. . .	Thirty-fifth st. Sewer	Southward . . .	56			
Moonaway place . .	Thirty-fifth st. Sewer	Northwesterly . . .		38		
Rhodes ave. . . .	Thirty-fifth st. Sewer	Southward . . .		42		
Ellis ave.	Thirty-fifth st. Sewer	Northward . . .		40		
Lake ave.	Thirty-fifth st. Sewer	Southward . . .		60		
Colfax ave. . . .	Thirty-fifth st. Sewer	Southward . . .			60	
Vernon ave. . . .	Thirty-fifth st. Sewer	Northward . . .			40	
South Park ave. . .	Thirty-fifth st. Sewer	Southward . . .			40	
Thirtieth st. . . .	South Park ave. Sewer	Southward . . .			40	
Stewart ave. . . .	Twenty-second st. Sewer	7' E. of E. line S. P'k ave			40	
Wentworth ave. . .	Twenty-second st. Sewer	Northward . . .			40	
Wentworth ave. . .	Twenty-second st. Sewer	Southward . . .			40	
Arnold ave. . . .	Twenty-second st. Sewer	Northward . . .				40
McGlashen ave. . .	7' N. of N. line 22d st.	7' S. of S. line 22d st.				80
Broadway ave. . .	Twenty-second st. Sewer	Northward . . .				40
Johnson ave. . . .	16' N. of N. line North av	16' S. of S. line North av				80
Ray st.	11' N. of N. line North av	11' S. of S. line North av				70
Gano st.	South Park ave. Sewer	7' W. of W. line S. P'k av				40
Thirty-first st. . .	South Park ave. Sewer	7' W. of W. line S. P'k av				40
Thirty-second st. .	7' E. of E. line S. P'k ave	7' W. of W. line S. P'k av				80
Thirty-third st. . .	7' E. of E. line S. P'k ave	7' W. of W. line S. P'k av				80
Thirty-fourth st. .	7' E. of E. line S. P'k ave	7' W. of W. line S. P'k av				80
Thirty-first st. . .	South Park ave. Sewer	7' E. of E. line S. P'k av				40
Thirty-first st. . .	E. line of Wabash ave.	W. line Wabash ave.				70
Thirty-first st. . .	E. line of Michigan ave.	W. line Michigan ave.				80
Total South Division, 20,604 feet = $3\frac{4764}{5290}$ Miles.			1,436	4,857	6,493	7,818

WEST DIVISION.

Location.			Length in Feet of Sewers built.				
On what Street.	From	To	5 ft.	4½ ft.	2½ ft.	2 ft.	1 ft.
Blackhawk st. Ridg- ville Road, Brigh- am st. & Mil- waukee ave. . . .	N. Br. Chicago River	Evergreen st. . .	4,381				
Lumber & Morgan sts	Mason's Canal . . .	Twenty-second st. .		1,428			
Ridgville Road . .	Blackhawk st. . .	South . . .			387		
Canalport ave. . .	Twenty-second st. .	North-east . . .			25		
Canalport ave. . .	25' N. E. of 22d st.	North-east . . .				33	
Green st.	Harrison st. . . .	Van Buren St. . .				770	
Morgan st.	Erie st.	Fourth st. . . .				436	
Wood st.	Indiana st. . . .	Fourth st. . . .				557	
Rebecca st. . . .	Centre ave. . . .	10' W. of W. line } Blue Island ave. }				680	
Henry st.	Centre ave. . . .	Blue Island ave. }				240	
Blue Island ave. .	Mitchell st. . . .	S. line Maxwell st.				518	
Milwaukee ave. . .	Evergreen st. . .	S. E. of North ave.				1,173	
Wood st.	7' N. of N. line Ad- ams st. }	Northward . . .				290	
Loomis st.	Monroe st. . . .	Adams st. . . .					371
Blue Island ave. .	Henry st.	Northward . . .					250
Blue Island ave. .	Henry st.	Rebecca st. . .					795
Fourth st.	Wood st.	Westward . . .					530
Jackson st. . . .	Ashland ave. . .	Westward . . .					575
Centre ave. . . .	7' S. of S. line Har- rison st. . . . }	Southward . . .					342
Carried forward, . .			4,381	1,428	412	4,697	2,863

WING SEWERS ACROSS STREETS TO BE PAVED.

Location.			Length in Feet of Sewers built.				
On what Street.	From	To	5 ft.	4½ ft.	2½ ft.	2 ft.	1 ft.
	Brought forward		4,381	1,428	412	4,697	2,863
Blue Island ave.	Twelfth st.	Southwest			37		
Mitchell st.	Centre ave.	Eastward			94		
Rucker st.	Milwaukee ave. sewer	Southward				69	
Rucker st.	Milwaukee ave. sewer	Northward				80	
Elston Road	Milwaukee ave. sewer	Northward				77	
Noble st.	Milwaukee ave. sewer	Northward				65	
Emma st.	Milwaukee ave. sewer	Westward				75	
Silver st.	Harrison st. sewer	Southward				38	
Gold st.	Harrison st. sewer	Southward				37	
Morgan st.	Harrison st. sewer	Northward				40	
Morgan st.	Harrison st. sewer	Southward				37	
Miller st.	Harrison st. sewer	Southward				37	
Sholto st.	Harrison st. sewer	Southward				37	
Aberdeen st.	Harrison st. sewer	Southward				40	
May st.	Harrison st. sewer	Southward				37	
Centre ave.	Harrison st. sewer	Southward				41	
Centre ave.	Harrison st. sewer	Northward				38	
Paulina st.	Adams st. sewer	Northward				40	
Paulina st.	Adams st. sewer	Southward				38	
Wood st.	Adams st. sewer	Southward				43	
Wood st.	Adams st. sewer	Northward				39	
Honore st.	Adams st. sewer	Southward				40	
Lincoln st.	Adams st. sewer	Northward				40	
Lincoln st.	Adams st. sewer	Southward				46	
Winchester st.	Adams st. sewer	Southward				44	
Winchester st.	Adams st. sewer	Northward				42	
Robey st.	Adams st. sewer	Southward				40	
Robey st.	Adams st. sewer	Northward				41	
Peoria st.	Indiana st. sewer	Northward				52	
Morgan st.	Indiana st. sewer	Northward				52	
Curtis st.	Indiana st. sewer	Northward				46	
Ada st.	Indiana st. sewer	Northward				54	
Noble st.	Indiana st. sewer	Northward				56	
Noble st.	Indiana st. sewer	Southward				56	
Elizabeth st.	Indiana st. sewer	Southward				56	
Elizabeth st.	Indiana st. sewer	Northward				56	
Newberry st.	Twelfth st. sewer	Northward				44	
Newberry st.	Twelfth st. sewer	Southward				46	
Johnson st.	Twelfth st. sewer	Southward				42	
Johnson st.	Twelfth st. sewer	Northward				42	
Brown st.	Twelfth st. sewer	Northward				37	
Morgan st.	Twelfth st. sewer	Northward				46	
Morgan st.	Twelfth st. sewer	Southward				41	
Waller st.	Twelfth st. sewer	Southward				44	
May st.	Twelfth st. sewer	Northward				48	
Centre ave.	Twelfth st. sewer	Northward				48	
Centre ave.	Twelfth st. sewer	Southward				61	
Sangamon st.	Chicago ave. sewer	Southward				63	
Carpenter st.	Chicago ave. sewer	Northward				61	
Morgan st.	Chicago ave. sewer	Southward				59	
Fifth st.	Chicago ave. sewer	Northward				56	
Green st.	Chicago ave. sewer	Southward				57	
Bryan Pl.	Randolph st. sewer	Northwesterly				66	
Page st.	Washington st. sewer	Northward				37	
Page st.	Washington st. sewer	Southward				42	
Robey st.	Washington st. sewer	Southward				40	
Page st.	Warren ave. sewer	Northward				40	
Page st.	Warren ave. sewer	Southward				40	
Lumber st.	22d st. sewer	Northward				49	
Jefferson st.	22d st. sewer	Northward				44	
Twenty-second st.	Canalport ave. sewer	Eastward				100	
Twenty-second st.	Canalport ave. sewer	Westward				78	
Lumber st.	22d st. sewer	Southwestward					85
Cleaver st.	Milwaukee ave. sewer	Northeastward					50
Cornelia st.	Milwaukee ave. sewer	Westward					65
Cornel st.	Milwaukee ave. sewer	Westward					65
Will st.	Milwaukee ave. sewer	Northward					65
Jane st.	Milwaukee ave. sewer	Southwestward					52
Fig st.	Milwaukee ave. sewer	Westward					75
Carried forward			4,381	1,428	543	7,657	3,320

WING SEWERS ACROSS STREETS TO BE PAVED.—CONTINUED.

Location.			Length in Feet of Sewers built.				
On what street.	From	To	5 ft.	4½ ft.	2½ ft.	2 ft.	1 ft.
	Brought forward		4,381	1,428	543	7,657	3,320
Southwestern ave.	Adams st. sewer	Northeastward					38
Green st.	Indiana st. sewer	Northward					49
Dix st.	Chicago ave. sewer	Northward					51
Carpenter st.	Chicago ave. sewer	Southward					59
Willard pl.	Randolph st. sewer	Southward					46
Southwestern ave.	Randolph st. sewer	Southwesterly					49
Sheldon st.	Randolph st. sewer	Northward					56
Tyler st.	Green st. sewer	Eastward					39
Tyler st.	Green st. sewer	Westward					40
Jackson st.	Loomis st. sewer	Westward					38
			4,381	1,428	543	7,657	3,785
Total, West Division, 17,794 ft. = $\frac{3,785}{5,280}$ Miles.							

NORTH DIVISION.

Location.			Length in Feet.		
On what Street.	From	To	2 ft.	1¼ ft.	1 ft.
Oakwood st.	Rush st.	State st.	146		
Blackhawk st.	Larrabee st.	Mohawk st.	309		
Eugenia st.	Clark st.	La Salle st.	194		
Whitney st.	Pine st.	Westward	362		
Superior st.	20' W. of Market st.	Sedgwick st.	355		
Townsend st.	14' S. of N. line Huron st.	N. line Superior	305		
Sedgwick st.	Huron st.	5' S. of S. line Chicago ave.			560
Superior st.	W. line Sedgwick	Centre of Kingsbury st.			775
Townsend st.	N. line Superior st.	5' S. of S. line Chicago ave.			275
Huron st.	Townsend st.	Kingsbury st.			400
Weed st.	Halsted st.	Westward			160
Washington place	Washington place sewer	13' N. of S. line Wash't'n P'k.			47
State st.	Oakwood st.	Whitney st.			589
Hinsdale st.	Market st.	Westward			200
Whiting st.	Market st.	Westward			202
Mohawk st.	North ave.	Clybourne ave.			1,900
Franklin st.	North ave.	Schiller st.			1,220
Schiller st.	Wells st.	La Salle st.			334
Goethe st.	Wells st.	La Salle st.			336
Illinois st.	Pine st.	Westward			115
Pearson st.	195' E. of Pine st.	Eastward			72
New Pine st.	Chicago ave.	Northward			728
Pine st.	112' N. of Pearson st.	Whitney st.			322
North ave.	La Salle st.	Clark st.			
Michigan st.	Pine st.	St. Clair st.		374	
Carried forward,			1,671	374	8,347

WING SEWERS ACROSS STREETS TO BE PAVED.

Location.			Length in Feet of Sewer.		
On what Street.	From	To	2 ft.	1¼ ft.	1 ft.
		Brought forward, . . .	1,671	374	8,347
Elm st.	Larrabee st. Sewer	20' W. of W. line Larrabee st.	53	.	.
Elm st.	20 ft. E. of E. line Market st.	20' W. of W. line Market st.	106	.	.
Wendel st.	20 ft. E. of E. line Market st.	20' W. of W. line Market st.	106	.	.
Blackhawk st.	20 ft. E. of E. line Larrabee st.	20' W. of W. line Larrabee st.	104	.	.
Crosby st.	Larrabee st. Sewer	36' N. W. of W. line Larrabee st.	89	.	.
Hobbie st.	Larrabee st. Sewer	25' W. of W. line Larrabee st.	54	.	.
Haines st.	Larrabee st. Sewer	34' W. of W. line Larrabee st.	68	.	.
Hawthorn ave.	Halsted st. Sewer	48' N. W. of W. line Halsted st. . . . .	.	95	.
Hinsdale st.	Market st. Sewer	18' W. of W. line Market st. . . . .	.	.	51
Whiting st.	Market st. Sewer	19' W. of W. line Market st. . . . .	.	.	52
Labar st.	Division st. Sewer	2' N. of N. line Division st. . . . .	.	.	56
St. Clair st.	Superior st. Sewer	19' S. of S. line Superior st. . . . .	.	.	56
Superior st.	12' W. of E. line St. Clair st.	11' E. of E. line St. Clair st. . . . .	.	.	23
Alaska st.	Larrabee st. Sewer	20' W. of W. line Larrabee st. . . . .	.	.	56
Hill st.	19' E. of E. line Market st.	21' W. of W. line Market st. . . . .	.	.	106
Huron st.	Kingsbury st. Sewer	40' W. of W. line Kingsbury st. . . . .	.	.	70
Superior st.	Kingsbury st. Sewer	42' W. of W. line Kingsbury st. . . . .	.	.	75
Hawthorn ave.	Larrabee st. Sewer	45' N. W. of W. line Larrabee st. . . . .	.	.	130
Labar st.	Larrabee st. Sewer	32' E. of E. line Larrabee st. . . . .	.	.	65
Hills st.	Sedgwick st. Sewer	25' E. of E. line Sedgwick st. . . . .	.	.	58
Goethe st.	End of 2 ft. Sewer on Goethe st.	7' W. of W. line La Salle st. . . . .	.	.	25
St. Clair st.	Michigan st. Sewer	23' N. of N. line Michigan st. . . . .	.	.	50
St. Clair st.	27' S. of S. line Illinois st.	25' N. of N. line Illinois st. . . . .	.	.	128
Hinsdale st.	22' E. of E. line Pine st.	22' W. of W. line Pine st. . . . .	.	.	110
White st.	22' E. of E. line Pine st.	22' W. of W. line Pine st. . . . .	.	.	110
North ave.	North ave. Sewer	North for city land . . . . .	.	.	32
Total North Division, 12,318 feet = $2\frac{1758}{5280}$ Miles.			2,251	469	9,698

REPAIRS OF SEWERS, CATCH-BASINS AND COVERS,
FOR 1871-2.

	Cost of Repairs of Sewers and Catch- Basins.	Cost of Repairs of Covers.	Totals.
South Division	\$3,050.06	1,774.15	4,824.21
West Division	1,796.83	2,727.85	3,975.39
North Division	619.03	1,407.06	2,065.09
	\$5,465.92	\$5,909.06	\$10,864.69

CLEANSING OF SEWERS FOR 1871-72.

Methods of Cleansing.	South Division.		West Division.		North Division.		Totals.		
	Feet Cleansed.	Cost.	Feet Cleansed.	Cost.	Feet Cleansed.	Cost.	Feet Cleansed.	Cost.	Per 100 ft.
By Flushing	83,518	\$1,469.25	70,837	\$1,388.18	34,180	\$682.30	188,535	\$3,539.73	\$1.87
By Chain Machine	27,610	3,931.89	22,735	2,533.79	24,318	2,102.25	74,663	8,567.93	11.47
Total Sewers	111,128	\$5,401.14	93,572	\$3,921.97	58,498	\$2,784.55	263,198	\$12,107.66	\$4.60
Catch Basins Cleansed	No. of 773	2,203.20	No. of 683	2,082.20	No. of 362	1,022.40	No. of 1,818	5,307.80	\$2.92
Costs		\$7,604.34		\$6,004.17		\$3,806.95		\$17,415.46	

STREET INTERSECTIONS.

There has been expended during the year for raising to the new grade and furnishing with new covers, for the streets being paved, the man-holes and catch-basins upon the same, the amount of \$21,616.79.

PRIVATE DRAINS.

PERMITS ISSUED FROM APRIL 1st 1871, TO APRIL 1st, 1872.

Division.	6-inch Drains.	9 inch. Drains.	12 inch Drains.	Total in 1871-72.	Total laid previously.	Total laid to April 1st, 1872.
South Division	360	27	9	396		
West Division	540	18	2	560		
North Division	290	4	1	295		
Totals,	1,190	49	12	1,251	24,990	26,241

LOSS OF RECORDS.

Besides the records of the Sewerage Department, mentioned by Mr. Clarke, the plans of the city shewing the water-pipes and the maps of the Dock-line Survey were destroyed by the fire. The loss of these is felt very much daily, and the labor of preparing for new work is very much increased by it.

1177 11

CONDITION OF THE RIVER.

Had it not been for the fire, the great event of the year in Chicago, so far as it related to public works, would have been the completion of the deepening of the Illinois and Michigan Canal. At all ordinary times now, the water of Lake Michigan enters the mouth of the river, flows up it and the South Branch to feed the canal, thus completely deodorizing what was so offensive and unbearable a year ago.

As was expected and stated by the Commissioners whose report and recommendations were adopted by the city for deepening the canal, this work does not materially affect the condition of the North Branch, which is at times exceedingly offensive. The causes of this, and the remedy, have been so often discussed that it seems useless to do more now than to refer you to the past Annual Reports of the Board, especially to the Ninth—pages 17 and 121.

HARBOR.

The construction of the Outer Breakwater to a point 2,000 feet south of the end of the South Pier was completed during the year, as was expected by Col. D. C. Houston, U. S. Engineers, in charge of Lake Harbors. There is already an extensive Outer Harbor, which will no doubt be made larger still, as the necessary appropriation has been made for it by Congress.

The old sand-bar inside of this Harbor, and which interferes with its usefulness as a roadstead, is a source of profit to the owners of dredges, who are removing large quantities of it for building purposes.

WASHINGTON STREET RIVER TUNNEL.

This continues to improve slightly with regard to leakage. The wooden pavement under the river was renewed in the winter, or in just three years after it was put down.

More trouble was experienced last winter in consequence of frost getting into the drains, and causing obstructions and floodings, than ever before. It is hoped that some slight changes made in the drains when the new pavement was laid will prevent the recurrence of this trouble.

In consequence of the eastern end of this tunnel being in the burnt district, the approach there was considerably damaged by the fire. The railing on top, the coping, and the surfaces of the retaining walls, were all injured, but not enough to prevent the use of the tunnel, which for some months after the fire was more needed than before, owing to the destruction of so many bridges.

LA SALLE STREET RIVER TUNNEL.

This was opened for public use on the 4th of July last, and has ever since proved of great service to the North and South Divisions of the city, and was the only means of communication between them for months after the fire.

This work was completed in a very satisfactory manner by the contractors, Messrs. Moss, Chambers & McBean, under the immediate supervision of Mr. Wm. Bryson, the resident Engineer. Experience gained during the construction of the Washington Street River Tunnel was taken advantage of, and consequently both an improved plan and better results have been obtained.

It was intended to give a complete description with accompanying drawings of this work, but it is so similar in nearly every respect to the Washington Street River Tunnel that it seems useless to go to that expense, especially as the fire not only destroyed the working plans, but made it imperatively necessary to cut off avoidable expenditures.

The three important respects in which this tunnel differs from the one on Washington street are grade of roadway, height of footway, and the free use of asphalt, and these, together with the stone fenders on the sides of the roadway, are the principal causes of the more pleasing appearance of the work, so often spoken of by citizens and others. The steepest grade in this tunnel is 1 in 20, while that of the Washington street one is 1 in 16; the height of the footway in this is 10 feet, while that of the other is only 8; and the laying of the upper courses of brickwork in the arches under the river in asphalt, instead of putting merely a thick coating on top, has secured much greater dryness in that part of the work.

The fire warped the iron railing around the open approaches to this tunnel as it did that of the east approach of the one on Wash-

ington street, rendering a considerable portion of it unfit for anything but scrap-iron. The coping likewise was very much injured, and the surfaces of the retaining walls were discolored and fractured to a considerable extent, but not sufficient to make it necessary to rebuild any portion of them at present. What the slow but powerful action of frost may do in future winters, it is impossible now to foresee.

Respectfully submitted.

E. S. CHESBROUGH,

City Engineer.

STREETS AND BRIDGES.

CHICAGO, April 1, 1872.

To the Board of Public Works :

GENTLEMEN—Since the last report of your Superintendent of Streets and Bridges, the work in this department, up to February 13, 1872, was done under the superintendence of my predecessor, Mr. J. K. Thompson, now a member of your Board, I having assumed the duties of Superintendent on that date.

In the last report of this department, the total number of bridges given was twenty-seven, since which time eight have been destroyed by fire, two of which have since been rebuilt—for a report of which, I respectfully refer you to the following report :

CHICAGO, April 1, 1872.

GEO. W. WILSON, ESQ.,

Superintendent of Streets and Bridges :

SIR—When the disastrous conflagration of October 9 last, took place, the city bridges were mostly in good condition. In addition to the general repairs for the year ending March 31, 1872, a new center protection of entire new piles was constructed at Rush Street Bridge, and a new center protection at Lake Street Bridge ; also, a new stone abutment, on a pile foundation, at the south approach to Clark Street Bridge, which was in course of construction at the time of the fire, which, with a portion of the coffer-dam, derricks, scaffolding, etc., were destroyed.

There were also destroyed eight of the most prominent bridges, with everything appertaining to them, such as center piers, protec-

tions, fenders, bridge-tenders' houses, furniture, tools, boats, scows, etc., involving a loss of not less than two hundred and four thousand dollars.

The stone center piers and abutments at Rush Street Bridge were but slightly damaged.

Clark Street Bridge was under general repairs, the Board having decided, some time previous, to widen it seven feet, to more fully accommodate the rapidly-growing traffic to which it was subjected. The bolsters on the turn-table had been lengthened, and all the material purchased and on the ground for the completion of the work. Everything in connection with the bridge had been renewed, except turn-table and trusses, making the structure almost new. Five of the bridges destroyed were what is known as "combination" bridges, with patent iron turn-tables, and were all new structures, built within the last three years, except Clark Street Bridge.

The bridges at Wells and State streets were wooden structures, of the "Howe" patent. Rush Street Bridge was a wooden superstructure, with center pier and abutments of stone. These three were good bridges, and would have lasted for a number of years.

The contract for rebuilding Clark Street Bridge on the combination plan for the draw, north approach, pile center protection, and stone center pier, bridge-tender's house, etc., was let on the 25th of October, to Messrs. Fox & Howard, and completed on the 9th of January. Messrs. Fox & Howard, in carrying through the contract, comprising some two hundred cubic yards of dimension masonry, at an inclement and unusual season of the year for such work, deserve the thanks of the public in meeting so pressing a want with such promptness—La Salle Street Tunnel being the only direct communication between the north and south divisions of the city.

The contract for rebuilding Van Buren Street Bridge was let on the 30th day of October, to Messrs. Sweet & Co., and completed on the 13th of January.

Rush Street Bridge is well under way, and will be ready for use about May 1st.

Adams Street, Chicago Avenue and Polk Street Bridges will be ready for traffic about the first of June. Wells and State Street Bridges, together with the viaducts to each, will be completed on or about the first of September.

Respectfully submitted,

G. R. BRAMHALL,

Assistant Superintendent.

The total cost of repairs to bridges was \$24,142.75.

The contracts for rebuilding the burnt bridges have been let for stone center piers and abutments, with the exception of Chicago Avenue Bridge, which will be combination superstructure, and stone center pier.

STREETS.

There were in the city at the close of the year ending March 31st, 1872, $93\frac{26}{35}$ miles of improved streets. The wooden block pavement was damaged by fire to an estimated amount of \$211,350, for details of which please refer to following report:

GEO. W. WILSON, Esq., *Superintendent Streets and Bridges*:

SIR—I herewith respectfully present a report of Street Improvements made during the past year:

	Miles.	Costs.
West Division,	9	\$567.812
North Division,	4	299.691
South Division,	7	281.791
Total,	20	\$1,149,298

Streets improved to date:

No. miles of Wooden Block Pavement,	72 $\frac{4}{5}$
No. miles of Graveled,	7 $\frac{4}{5}$
No. miles of Macadamized,	5 $\frac{1}{2}$
Boulder and Stone Block,	2 $\frac{1}{5}$
Cindered,	5 $\frac{4}{5}$
Total,	93 $\frac{26}{35}$

More or less finished drives in parks and boulevards not included.

A sectional map of the city elsewhere, shows its total area to be 32 square miles, of which was swept by the October fire :

	Area Acres.	Miles of Streets Improved.	Damage to Improved Streets.
West Division .	105.29	1.6	\$5,050.00
North Division .	1,32.	16.3	106,300.00
South Division .	260.6	8.4	100,000.00
Total, . . .	1,687.89	26.3	\$211,350.00

This does not include burned area of shipping bridges and parks.

The paved streets stood the fire better than could have been expected ; the heat being so intense as to bend the iron tracks of the street railways, and in many instances tearing them entirely loose and throwing them out of shape. The damage to the paving was estimated by considering the same equivalent to an equal amount of wear—ten years being the estimated average duration of wooden block pavement in this city, and then replaced at \$1.50 per square yard, and the curbstone at \$1.00 per lineal foot.

Respectfully submitted,

AXEL SILVERSPARRE,

Ass't Engineer.

CHICAGO, April 1st, 1872.

The contract for cleaning the improved streets has been faithfully performed. This contract expired November 15th, 1871, since which time up to this date the cleaning has been done by laborers in the employ of the Board, which, however, has not been as thorough as could have been desired, owing to the peculiar circumstances in regard to funds in which the city was placed. A new contract for sweeping and cleaning the streets for three years from this date has been let to Mr. G. G. Russell.

I respectfully invite your attention to the following table, in which the cost of cleaning and repairing the streets is given :

Division.	Cleaning Improved Streets.	Cleaning and Repairing Streets.	Cost of Materials Used in Street Repairs.						Hard- ware & Tools.	Repair- ing Tools.
			Lumber.	Spl ^{es} and Nails.	Gravel.	Macadam.	Cinders.	Paving Cement.	Filling.	
North Division	\$16,701.16	\$33,545.98	\$3,508.45	\$100.75	\$1,811.80	\$703.23	\$262.50	\$350.00	\$113.75	\$91.39
South Division	27,532.46	36,366.44	7,181.11	522.70	2,643.01	1,048.35	348.25	208.72	380.00	77.83
West Division	26,730.23	95,138.97	17,513.46	1,400.45	116.35	6,758.27	754.00	291.22	4,776.23	182.07
Total	\$70,963.85	\$16,511.39	\$28,199.52	\$2,113.95	\$4,571.16	\$8,529.85	\$1,364.75	\$849.64	\$5,269.00	\$351.20
										\$139.84

The estimated damage to the coping and railing of the Washington Street Tunnel is at \$2,157; to the La Salle Street Tunnel, \$3,914.

HARBOR.

The work of dredging the Harbor has been done at localities required in the main river and branches, keeping a depth of water sufficient for all requirements of navigation.

Several vessels were burned and sunk in the Harbor during the fire of October 9th. The contracts for raising the "Valetta" and "Eclipse," near the entrance of the Harbor, and the "Glenbeula," in the North Branch, have been let.

The docks at the street ends were damaged by the same fire to the amount of about \$6,000.

Respectfully submitted.

GEO. W. WILSON,
Superintendent of Streets and Bridges.

7

FINANCIAL STATEMENT.

To the Board of Public Works:

GENTLEMEN—Herewith I respectfully present my Report of the Receipts and Expenditures by the Board of Public Works from April 1, 1871, to March 31, 1872, inclusive.

TRIAL BALANCE, LEDGER, BOARD OF PUBLIC WORKS, MARCH 31, 1872.

	Dr.	Cr.
Water Works,	\$4,223,960.10	
Water Works Income,		\$4,127,419.32
Water Fund in hands of City Treasurer,	887,136.93	
Water Loan Bonds, 6 per cent.,		1,030,000.00
Water Loan Bonds, 7 per cent.,		3,790,000.00
Water Loan Interest,	1,822,814.07	
Water Expense and Repairs,	1,625,189.47	
Discount on 6 per cent. Water Bonds,	66,380.95	
Duncan, Sherman & Co.,	6,300.00	
The Knap Fort Pitt Foundry,	134,762.42	
Water Works Coal Account,		15,800.04
Water Works Stock,	27,191.20	
Lake Tunnel Extension,	29,248.14	
Water Works New Engine,	30,515.39	
Water Pipe Account,	22,405.67	
New Crib,	400.00	
Amounts carried forward,	\$8,876,304.34	\$8,963,219.36

	Dr.	Cr.
Amounts brought forward, . . .	\$8,876,304.34	\$8,963,219.36
Water Works Service Cocks, . . .	\$ 317.30	
Damage by Fire,	5,853.18	
Water Tax Fund,	40,000.00	
E. M. Johnson, Bookkeeper, . . .	500.00	
Randolph Street Water Service Pipe, . .	1,862.86	
Park Avenue Water Service Pipe, . . .	3,215.50	
Jackson Street Water Service Pipe, . .	1,930.28	
Chicago Avenue Water Service Pipe, . .	2,542.68	
La Salle Street Water Service Pipe, . .	525.31	
Indiana Street Water Service Pipe, . .	538.15	
Canalport Avenue Water Service Pipe, .	808.14	
Aberdeen Street Water Service Pipe, . .	829.70	
Illinois Street Water Service Pipe, . .	946.16	
Erie Street Water Service Pipe,	1,570.91	
Union Street Water Service Pipe, . . .	840.46	
Milwaukee Avenue Water Service Pipe, .	680.77	
Market Street Water Service Pipe, . . .	1,634.46	
Michigan Avenue Water Service Pipe, . .	1,882.73	
Wells Street Water Service Pipe, . . .	1,416.20	
Washington Street Water Service Pipe, .	1,396.61	
Warren Avenue Water Service Pipe, . .	1,547.75	
Sedgwick Street Water Service Pipe, . .	919.21	
Larrabee Street Water Service Pipe, . .	854.68	
Loomis Street Water Service Pipe, . . .	427.75	
South Park Avenue Water Service Pipe, .	2,785.90	
Superior Street Water Service Pipe, . .	791.04	
Twenty-sixth Street Water Service Pipe, .	609.06	
Ontario Street Water Service Pipe, . . .	760.91	
Green Street Water Service Pipe,	1,112.01	
Huron Street Water Service Pipe,	987.60	
Polk Street Water Service Pipe,	401.59	
Twenty-first Street Water Service Pipe, .	125.30	
Depuyster Street Water Service Pipe, . .	166.88	
Pearson Street Water Service Pipe, . . .	90.04	
Twenty-third Street Water Service Pipe, .	283.48	
Twenty-eighth Street Water Service Pipe, .	121.39	
Douglas Place Water Service Pipe, . . .	439.39	
Pine Street Water Service Pipe,	378.84	
Monroe Street Water Service Pipe, . . .	187.29	
Twenty-second Street Water Service Pipe, .	491.49	
Amounts carried forward,	\$8,959,077.34	\$8,963,219.36

	Dr.	Cr.
Amounts brought forward, . . .	\$8,959,077.34	\$8,963,219.36
Fulton Street Water Service Pipe, . . .	588.06	
Quarry Street Water Service Pipe, . . .	191.22	
Bryan Place Water Service Pipe, . . .	122.00	
Adams Street Water Service Pipe, . . .	1,081.10	
Cottage Grove Avenue Water Service Pipe, . . .	1,711.90	
Taylor Street Water Service Pipe, . . .	208.46	
Oak Street Water Service Pipe, . . .	239.28	
Sewerage Fund due City Treasurer, . . .	4,489.80	
Sewerage Sinking Fund, . . .		65,341.55
Sewerage Loan Interest, . . .	52,754.37	
Sewerage Stock Account, . . .	1,293.50	
American Exchange National Bank, . . .	7,875.00	
Sewerage Sinking Fund in hand of Treas., . . .	52,088.16	
Certificates of Indebtedness, . . .		54,866.67
House Drains, . . .	664.35	
S. S. Hayes, . . .		1,069.50
Chas. Messenger, . . .		339.87
C. T. Bowen, . . .		118.98
Galena & Chicago Union R. R., . . .		382.55
Chicago, Burlington & Quincy R. R., . . .		6,744.01
H. O. Stone, . . .		409.53
J. Y. Scammon, . . .		5,537.00
G. C. Walker, . . .		658.23
Lake Street Drains, . . .	4,379.60	
Paulina Street Drains, . . .	797.27	
Prairie Avenue Drains, . . .	231.00	
Twenty-eighth Street Drains, . . .	81.90	
Douglas Place, . . .	736.70	
Damage by Fire, . . .	10,076.24	
River Imp. Fund in hands of City Treas., . . .	1,009.85	
American Exchange National Bank, . . .	9,415.00	
River Improvement Loan Interest, . . .		35,283.53
River Improvement Sinking Fund, . . .		44,827.08
River Improvement Bonds, 7 per cent., . . .		2,896,000.00
River Imp. Sinking Fund in hands of Tr. . . .	44,827.08	
River Improvement Bonds Canceled, . . .		104,000.00
River Imp. Certificates of Indebtedness, . . .		276,025.03
Deepening the Illinois & Michigan Canal, . . .	3,300,883.71	
Appropriation Fund in hands of Treas., . . .	651,080.46	
North Division, . . .		5,011.74
Amounts carried forward, . . .	\$ 13,105,903.35	\$12,459,834.63

	Dr.	Cr.
Amounts brought forward,	\$13,105,903.35	\$12,459,834.63
South Division,		30,374.64
West Division,		12,378.07
Special Assessment Expense,	31,554.26	
Temporary City Hall,	69,473.91	
Certificates of Indebtedness,		129,865.85
Canal Redemption Fund,		55,000.00
Sidewalks North Division,	3,033.04	
Sidewalks South Division,	4,670.58	
Sidewalks West Division,		1,203.94
Public Parks,		5,337.22
Public Buildings,		6,440.54
Washington Street Tunnel,		611.64
Confiscated Property,		225.60
Street Signs,		1,298.28
Street Lamps,	203.06	
Public Hydrants,		950.83
Union Park Extension,		100,000.00
Samuel Polkey, R. C.,	308.12	
Warrant No. 480,		308.12
Proportional Expense,		4,853.66
City Time,		2,375.03
Pounds,		2,663.41
House Numbers,		849.30
Erie Street Viaduct,		2,857.94
Canal Street Viaduct,		30,000.00
Public Benefits,		279,730.69
Chicago Harbor,		7,249.38
Land Damages at Polk Street,		14,112.44
Land Damages at Twelfth Street,		27,000.00
Land Damages at Eighteenth Street,		27,000.00
Land Damages at Twenty-second Street,		6,806.53
Land Damages at Division Street,		5,000.00
Land Damages at Adams Street,		231.72
Land Damages at Erie Street,		7,000.00
Land Damages at Archer Avenue,		8,000.00
Bridge Department,		4,440.39
Fullerton Avenue Bridge,		2,000.00
Diversy Street Bridge,		1,000.00
Rush Street Bridge,	7,367.08	
Clark Street Bridge,	31,205.43	
Amounts carried forward,	\$13,253,718.83	\$13,236,999.85

	Dr.	Cr.
Amounts brought forward,	\$13,253,718.83	\$13,236,999.85
Van Buren Street Bridge,	14,307.94	
Polk Street Bridge,	8,068.63	
Chicago Avenue Bridge,	10,400.00	
Adams Street Bridge,	6,404.45	
North Halsted Street Bridge,		25,000.00
Healy Slough Bridge,		16,000.00
South Halsted Street Bridge,		15,000.00
Lumber Account,	100.00	
Sewerage Tax Fund,	45,250.46	
Sewers North Division,	668,542.25	
Sewers South Division,	929,875.41	
Sewers West Division,	1,427,365.69	
Sewerage Loan Bonds, 6 per cent.,		87,000.00
Sewerage Loan Bonds, 7 per cent.,		2,593,000.00
Sewerage Loan Bonds Canceled,		320,000.00
Certificates of Indebtedness,		6,761.90
Covers Account,	1,444.57	
General Taxes 1871,		144,873.24
Brick Account,	57.00	
Pipe Account,	2,065.60	
S. Lynd, Treasurer Sewerage Comm'rs,	109,245.48	
Dennis Coughlin,	1,561.51	
Wm. M. Dee,		19,638.77
Seip & Lehmann,		1,526.06
J. Clark & Son,		514.71
F. Tuley, Jr., & Co.,		1,425.00
T. O'Brien,		1,500.00
Joliet Mound Co.,		1,700.35
W. F. Myrick,		1,214.75
W. F. Tiedmann,		5,313.94
Burt & Snow,		427.50
T. O'Brien,		511.75
Water Tax Fund,	50,390.67	
General Taxes 1871,		289,746.47
Water Works,	293,729.13	
Certificates of Indebtedness,		14,373.33
Water Fund,		40,000.00
La Salle Street Tunnel Fund,		19,098.77
Certificates of Indebtedness,	1,971.88	
La Salle Street Tunnel Bonds,		531,733.36
Amounts carried forward,	\$16,824,499.50	\$17,373,359.75

	Dr.	Cr.
Amounts brought forward,	\$16,824,499.50	\$17,373,359.75
Cost of Tunnel,	548,860.25	
City Hall Fund,	7,231.67	
City Hall Bonds,		457,000.00
Certificates of Indebtedness.		7,846.16
Cost of City Hall,	457,614.49	
City Bridewell Fund,	41,031.93	
City Bridewell Bonds,		385,000.00
Cost of City Bridewell,	343,968.07	
	<u>\$18,223,205.91</u>	<u>\$18,223,205.91</u>

WATER FUND.

STATEMENT of the Receipts by the Board of Public Works, from April 1st, 1871, to March 31st, 1872, inclusive, and detailed Statement of the Expenditures during the same time:

RECEIPTS.

Received from Water Tax collected,	\$446,264.75
Received from 1 Mill Tax,	289,746.47
Received from State to pay Int.,	155,613.38
Received from Service Pipe Assessment,	39,110.55
Received for Tapping Pipes,	9,608.05
Received from Temporary Loans,	70,865.41
Received for Letting on Water,	972.48
Received for Lab. and Mat.,	1,726.84
Received for Brick Sold,	1,056.82
Received for Old Iron,	1,750.00
Received for Vouchers canceled,	269.90
Received for Setting Meters,	285.74
Received for License,	25.00
Received for Office Rent,	50.00
Total Receipts,	<u>\$1,017,345.39</u>

EXPENDITURES.

ADDITION TO WATER WORKS.

	Cash Payment.	True Cost.
Distributing Pipes and Supply		
Mains Laid,		
Cast Iron Pipe, 4, 6, 8, 12, 16,		
24 and 36 inch,	\$188,945.04	
Labor laying Pipe,	56,294.74	
Lead,	13,095.14	
Trenching and Backfilling,	9,765.18	
Amount carried forward,	<u>\$268,100.10</u>	

		Cash Payment.	True Cost.
Amount brought forward,	\$268,100.10		
Castings,	9,531.12		
Cement,	4,938.75		
Hauling Pipe,	2,418.10		
Plumbing,	1,957.57		
Brick used,	1,853.00		
Lumber,	1,746.86		
Rope, Gasket, &c.,	1,303.87		
Sewer Pipe,	1,087.10		
Freight,	913.27		
Hardware,	526.57		
Rent of Pipe Yard,	598.13		
Keeping Horses,	859.03		
Stationery,	169.20		
Repairing Wagon,	139.40		
Tools,	304.60		
Horse Shoeing,	132.45		
Use of Horse,	50.00		
Printing,	7.90		
Coal,	19.00		
Four Harness,	89.30		
Hose,	25.35		
Paint, Oil, &c.,	94.83		
Nails,	30.89		
		\$296,896.39	
ADD—			
New Hydrants, Stop Cocks, and			
Labor at Shop in 1871,	\$22,682.71		
DEDUCT—			
Amount received for			
Labor and Mate-			
rial from private			
Parties,	\$1,726.84		
Pipe received in 1870			
paid for in 1871,	1,687.07	3,413.91	
		\$19,268.80	\$316,165.19
Amounts carried forward,		\$296,896.39	\$316,165.19

THE BOARD OF PUBLIC WORKS.

121

	Cash Payment.	True Cost.
Amounts brought forward,	\$296,896.39	\$316,165.19

NEW ENGINE.

Paid Knap Fort Pitt Foundry

Contractors,	\$91,506.48
Freight,	1,102.86
Lumber,	315.42
Traveling Expenses,	206.45
Labor,	94.75

93,225.96

ADD—

Labor at Shop in 1871,	\$1,396.40
Amount paid on account of Fire,	1,189.46
	<u>\$2,585.86</u>

95,811.82

LAKE TUNNEL EXTENSION.

Brick Purchased,	\$14,488.46
Labor,	953.50
Printing,	62.30
Advertising,	30.00
Repairing Tools,	34.50

15,568.76

DEDUCT—

Amount received for Brick sold,	<u>\$1,056.82</u>
---	-------------------

14,511.94

IRON FENCE AT WATER WORKS.

Cut Stone,	\$3,400.00
Iron Work,	2,000.00
Labor,	430.34

5,830.34 5,830.34

Total Additions to Water Works,

\$411,521.45 \$432,319.29

WORKING EXPENSES AND REPAIRS.

OFFICE EXPENSES AND SALARIES.

	Cash Payment.	True Cost.
Salaries of Commissioners, . . .	\$4,000.00	
Salary of Secretary, . . .	1,000.00	
Salary of Superintendent, . . .	1,000.00	
Salary of City Engineer, . . .	1,500.00	
Salaries of Bookkeepers and Clerks, . . .	4,300.00	
Salaries of Collectors, . . .	6,200.00	
Salaries of Assessor and Assistant, . . .	3,700.00	
Salary of Draughtsman, . . .	3,100.00	
Salaries of Engineers, . . .	1,600.00	
Salary of Engineer's Clerk, . . .	1,300.00	
Salaries of Office Clerks, . . .	3,720.00	
Labor,	4,543.18	
Office Rent,	1,489.25	
Printing,	1,945.50	
Stationery,	991.71	
Blank Books,	706.02	
Advertising,	386.79	
Car Fares,	342.84	
Printing Tenth Annual Report, . . .	486.66	
Furniture,	208.70	
Hardware,	256.04	
Miscellaneous Cash Items, . . .	104.57	
Gas,	87.05	
Subscription to Papers, . . .	22.01	
Maps,	95.06	
Stamps,	91.68	
Cleaning Office,	53.00	
Ice,	13.70	
Coal,	16.42	
Lumber,	42.59	
Brooms, Dusters and Matches, . .	24.32	
	<hr/>	
	\$43,327.09	
Amount carried forward,	\$43,327.09	

	Cash Payment.	True Cost.
Amount brought forward,	\$43,327.09	

DEDUCT—

Amount received for		
License,	\$ 25.00	
Amount received for		
Rent,	50.00	
Amount received from		
Assessments,	5,606.51	
	<u>\$5,681.51</u>	\$37,645.58

PUMPING WORKS.

10,026 ¹⁰⁶⁰ / ₂₀₀₀ Tons Coal at Pumping	
Works,	\$66,289.52
Salaries of Engineer and Assist-	
ants,	8,100.00
Labor,	20,580.32
Castings,	9,128.71
Lumber,	3,605.76
Repairing Boilers,	1,160.89
Gas used,	1,587.75
Iron, Nails, and Bolts,	1,270.18
Rope, Gasket, and Packing,	738.55
Keeping Water Works Horses,	971.60
Oil,	944.64
Lead,	277.10
Hardware,	122.11
Bloss. Coal,	121.58
Copper Work,	240.88
1 Stop-Valve,	290.00
Repairing Buggy,	43.80
Plumbing,	79.37
Soap,	29.00
Stationery,	52.45
Tools,	95.67
	<u>115,729.88</u>

ADD—

Coal used not paid for,	\$14,778.01	
Amounts carried forward,	\$159,056.97	\$37,645.58

	Cash Payment.	True Cost.
Amounts brought forward,	\$159,056.97	\$37,645.58
DEDUCT—		
Labor making Hy-		
drants and Stop-		
cocks,	\$22,274.21	
Stable Expenses, chg.		
Sundry Acc'ts,	561.04	
Labor and Material		
at Shops,	7,326.68	
Old Iron Sold,	1,901.15	
Vouchers Canceled,	118.75	
	\$32,181.83	
	\$17,403.82	98,326.06

DAMAGE BY FIRE TO PUMPING WORKS
AND MACHINE SHOPS.

Machinists, Masons and Laborers,			
repairing Engines and Buildings,	\$20,572.59		
Carpentry Work,	14,768.54		
Tools,	1,412.67		
Packing,	1,263.97		
Roofing,	1,495.39		
Covering Boiler,	1,346.40		
Copper Work,	2,297.79		
Lumber,	3,200.65		
Castings,	7,575.24		
1 Lathe,	816.74		
Freight,	135.80		
Hardware,	410.46		
Steam Gauge,	300.82		
Oil, etc.,	223.25		
Steam Fitting,	218.32		
Provisions,	207.53		
Stone Work,	612.13		
Lime,	312.11		
Coal,	106.78		
Nails,	115.39		
Horse Hire,	155.00		
Horse Feed,	69.21		
Miscellaneous Cash Items,	9.90		
Lead,	14.89		
Amounts carried forward,	\$57,641.57	\$159,056.97	\$135,971.64

		Cash Payment.	True Cost.
Amounts brought forward, .	\$57,641.57	\$159,056.97	\$135,971.64
Bedding,	94.75		
Furniture,	46.60		
Use of Buggy,	50.00		
		57,832.92	
Add—			
Coal used,	\$108.82		
Amount charged Machine Shops, Pumping Works, and other Wa- ter Accounts to be deducted, .	52,088.56		
	\$51,979.74		5,853.18

DAMAGE TO RESERVOIR AND HYDRANTS BY FIRE.

Labor, repairing same,	\$12,903.92		
Lumber,	250.54		
Castings,	731.72		
Horse Feed,	63.30		
Coal,	39.95		
Rope,	30.66		
Cement,	20.00		
Oil,	1.05		
		14,041.14	14,041.14

REPAIRS OF PIPE, HYDRANTS, STOP COCKS, AND
MISCELLANEOUS OPERATING EXPENSES.

Labor,	\$32,113.43		
Castings,	1,224.65		
Hydrant Inspectors,	4,598.50		
Repairing Engine House,	322.56		
Repairing Leaks,	450.60		
Lumber,	365.21		
Boiler Iron,	260.20		
Cement,	133.17		
Keeping Horse,	163.51		
Lead,	66.93		
Hardware,	50.40		
Tools,	22.50		
Wire Cloth,	46.50		
Repairing Reservoir,	301.60		
Nails,	46.60		
Packing,	9.00		
		40,175.36	
Amounts carried forward,	\$271,106.39	\$155,865.96	

	Cash Payment.	True Cost.
Amounts brought forward,	\$271,106.39	\$155,865.96
ADD—		
New Boiler and Re-		
pairing Hydrants, \$2,250.09		
Damage by Fire, 37,746.29		
Depreciation of Me-		
ters, 6,501.25		
Grading Lot, Watch-		
ing Reservoir, etc. 1,198.22		
	\$47,695.85	
DEDUCT—		
Amount received for letting on		
Water, 972.48		
	\$46,723.37	
		86,898.73

WATER METERS.

Labor,	\$3,936.09	
Castings,	1,292.76	
Plumbing,	185.68	
Meters,	131.00	
Keeping Horse,	65.68	
Hardware,	200.32	
Printing,	45.31	
New Wagons,	290.65	
Horse Cover,	21.00	
Harness,	38.50	
Candles,	16.09	
Dials,	296.77	
Lumber,	40.02	
	<hr/>	6,559.87

ADD—		
Labor at Shop in 1871,	\$168.65	
DEDUCT—		
Amount received for setting Meters, \$285.74		
	\$117.09	6,442.78
Amounts carried forward,	\$277,666.26	\$249,207.47

THE BOARD OF PUBLIC WORKS.

127

	Cash Payment.	True Cost.
Amounts brought forward	\$277,666.26	\$249,207.47

LAKE TUNNEL CRIB.

Labor,	\$447.93
Use of Tug,	255.00
Oil,	246.53
Pump,	6.30
Hardware,	11.30
Board of Men,	23.97
Lumber,	60.65
Earth Closet,	28.00
Nails,	13.50

1,093.18

ADD—

Coal used,	\$2.02	1,095.20
----------------------	--------	----------

TEMPORARY SUPPLY.

Labor,	\$1,801.88
Boiler Rent,	1,378.92
Coal used,	844.08
Pumps,	477.81
Lumber,	183.63
Plumbing,	344.93
Packing,	200.00
10 Tubs,	90.00

5,321.25 5,321.25

WATER WORKS SHOPS.

Cost of running Shops,	\$ 2,834.09
Damage by Fire,	13,152.81

\$15,986.90

Total operating expenses,	\$284,080.69	\$271,610.82
-------------------------------------	--------------	--------------

WATER LOAN INTEREST.

	Cash Payment.	True Cost.
Interest on Water Bonds July		
1st, 1871,	\$149,266.22	
Interest on Water Bonds Jan.		
1st, 1872,	143,713.38	
Coupons paid by City Treasurer,	22,960.00	
Premium on Gold,	48.48	
	\$315,988.08	
ADD—		
Amount transferred from Dis-		
count Account,	<u>\$4,899.16</u>	
DEDUCT—		
Amount received from State,	<u>\$155,613.38</u>	
	\$150,714.22	<u>\$165,273.86</u>
Totals,	\$315,988.08	\$165,273.86

MISCELLANEOUS EXPENSE.

	Cash Payment.	True Cost.
WATER SERVICE-COCKS.		
Labor,	\$3,286.96	
Permit Clerk,	923.86	
Taps,	564.01	
Hardware,	30.25	
Repairing Tools,	24.90	
Harnesses,	77.00	
Keeping Horse,	179.13	
		\$5,086.11
ADD—		
Labor at Shop in 1871,	\$333.93	
DEDUCT—		
Amount received for Tapping,	9,608.05	
INCOME.		
Tax overpaid refunded,	430.11	430.11
STOCK ACCOUNT.		
One Pipe Press,	\$1,000.00	
Two Kettles,	31.00	
	1,031.00	1,031.00
NEW CRIB.		
Labor,	400.00	400.00
CERTIFICATES OF INDEBTEDNESS.		
Temporary Loans Paid,	\$56,492.08	
DEDUCT—		
Amount received for Temp- orary Loans,	\$70,865.41	
Amounts carried forward,	\$63,439.30	\$1,861.11

	Cash Payment.	True Cost.
Amounts brought forward,	\$63,439.30	\$1,861.11
WATER SERVICE PIPE.		
Blue Island Avenue Service Pipe,	\$810.72	
Fourteenth Street " "	12.39	
Calumet Avenue " "	58.03	
Chicago Avenue " "	1,396.03	
Halsted Street " "	134.75	
Canalport Avenue " "	177.35	
Illinois Street " "	729.84	
Michigan Avenue " "	2,038.63	
Loomis Street " "	172.50	
Superior Street " "	149.22	
Ontario Street " "	77.73	
Kingsbury Street " "	40.29	
Twelfth Street, " "	458.43	
Madison Street " "	135.15	
Twenty-first Street " "	125.30	
Depuyster Street " "	166.88	
Water Service Pipe on Pearson Street,	90.04	
Twenty-third Street Service Pipe,	283.48	
Twenty-eighth Street " "	121.39	
Douglass Place " "	439.39	
Pine Street " "	378.84	
Monroe Street " "	187.29	
Twenty-second Street " "	491.49	
Fulton Street " "	588.06	
Quarry Street " "	191.22	
Bryan Place " "	122.00	
Adams Street " "	1,081.10	
Cottage Grove Avenue " "	1,711.90	
Taylor Street " "	208.46	
Oak Street " "	239.28	
	<hr/>	
	\$12,817.18	
DEDUCT—		
Amount received for Service Pipe, \$39.110.55		
Total Miscellaneous Expenses,	<u>\$76,256.48</u>	<u>\$1,861.11</u>

THE BOARD OF PUBLIC WORKS.

131

WATER FUND RECAPITULATION.		Cash Payment.	True Cost.
Total Additions to Water Works brought forward,		\$411,521.45	\$432,319.29
Total Operating Expenses brought forward, . . .		284,080.69	271,610.82
Total Water Loan Interest brought forward, . . .		315,988.08	165,273.86
Total Miscellaneous Expenses brought forward, . . .		76,256.48	1,861.11
Totals,		<u>\$1,087,846.70</u>	<u>\$871,065.08</u>
Total cash expenditures,		\$1,087,846.70	

SEWERAGE FUND.

STATEMENT of Receipts by the Board of Public Works from April 1, 1871, to March 30, 1872, inclusive, and detailed Statement of Expenditures during the same time:

RECEIPTS.

Received from City on Account of Tax for 1871,	\$667,258.39	
“ “ State “ Interest,	184,048.74	
“ “ Certificates of Indebtedness,	86,961.90	
“ “ Private Drains,	31,618.71	
“ “ Permits issued,	6,908.35	
“ for Constructing Private Sewers,	1,500.00	
“ “ Covers sold,	125.50	
“ “ Rent,	50.00	
Total Receipts,		\$978,471.59

EXPENDITURES.

SEWERS, NORTH DIVISION.		Cash Payment.	True Cost.
Labor Building Sewers,	\$5,526.15		
Sewers Built by Contract,	4,963.19		
Cement,	696.47		
Lumber,	160.10		
Hardware,	12.00		
Repairing Tools,	17.40		
Stone,	4.97		
		\$11,380.23	
ADD—			
Expense of Sewer Superior street,	\$ 639.35		
“ “ Whitney street,	1,095.60		
“ “ Pine street,	1,021.50		
“ “ North avenue,	778.60		
“ “ Eugenie street,	716.36		
Amounts carried forward,	\$4,251.41	\$11,380.23	

	Cash Payment.	True Cost.
Amounts brought forward, . . .	\$4,251.41	\$11,380.28
Expense of Sewer State street, . . .	390.45	
“ “ Hinsdale street, . . .	136.90	
“ “ Mohawk street, . . .	2,298.23	
“ “ Franklin street, . . .	1,903.20	
“ “ Schiller street, . . .	500.85	
“ “ Goethe street, . . .	490.90	
“ “ Vine street, . . .	7.60	
“ “ Otis street, . . .	7.60	
“ “ Pleasant street, . . .	7.60	
Brick used,	2,692.50	
Pipe used,	1,800.00	
Depreciation in Tools,	100.00	
	<u>\$14,587.24</u>	\$25,967.52

SEWERS, SOUTH DIVISION.

Labor on Sewers,	\$10,368.59	
Constructing Sewers,	2,992.84	
Cement,	975.55	
Lumber,	71.33	
Hardware,	12.00	
	<u>14,420.31</u>	

ADD—

Expense of Sewer Michigan ave.	\$ 361.27		
“ “ Twenty-fourth st.	917.71		
“ “ Twenty-third st.	1,477.76		
“ “ Wabash avenue,	215.00		
“ “ Harrison street,	13.50		
“ “ Third avenue,	9.00		
“ “ Thirty-fifth street,	123.40		
“ “ Indiana avenue,	298.00		
“ “ Calumet avenue,	275.75		
“ “ Archer avenue,	2,503.86		
“ “ Northern avenue,	1,650.00		
“ “ Quarry street,	2,586.45		
“ “ Oakwood street,	84.25		
“ “ Grove street,	1,888.66		
“ “ Stewart avenue,	11.70		
For construction of Sewers, for which money was advanced,	<u>32,833.58</u>		
Amounts carried forward,	\$45,249.89	\$25,800.59	\$25,967.52

		Cash Payment.	True Cost.
Amounts brought forward,	\$45,249.89	\$25,800.59	\$25,967.52
Brick, used,	3,114.42		
Pipe, used,	1,950.00		
Depreciation in Tools.	100.00		
	<u>\$50,414.31</u>		
DEDUCT—			
Amount received for construct-			
ing Sewers,	\$1,885.00		
	<u>\$48,529.31</u>		62,949.62
SEWERS, WEST DIVISION.			
Labor on Sewers,	\$12,058.09		
Constructing Sewers,	569.46		
Cement,	2,193.87		
Lumber,	105.54		
Hardware,	12.00		
Filling,	25.00		
Sand,	<u>21.87</u>		
		14,985.83	
ADD—			
Expense of Sewer Morgan street,	\$6,409.45		
“ “ Green street,	2,061.08		
“ “ Madison street,	4.50		
“ “ Loomis street,	806.49		
“ “ Adams street,	18.00		
“ “ Blackhawk st.	22,364.66		
“ “ Blue Island ave.	1,828.65		
“ “ Henry street,	289.86		
“ “ Rebecca street,	869.36		
“ “ Taylor street,	3.80		
“ “ Wood street,	1,516.35		
“ “ Fourth street,	1,054.50		
“ “ Ridgeville street,	496.91		
“ “ Jackson street,	21.00		
“ “ Mil. avenue,	1,273.82		
“ “ Centre avenue,	284.60		
Constructing Sewers for which money			
was advanced,	939.25		
Brick used,	5,230.27		
Pipe used,	3,769.84		
Depreciation in Tools,	150.00		
	<u>\$49,392.39</u>		64,378.22
Amounts carried forward,		\$40,786.42	\$153,295.36

	Cash Payment.	True Cost.
Amounts brought forward,	\$40,786.42	\$153,295.36
REPAIRS, NORTH DIVISION.		
Labor,	\$1,007.16	
Hardware,	6.20	
Cement,	13.28	
Repairing wagon,	38.45	
	<u> </u>	
	\$1,065.09	
ADD—		
Brick, Pipe and Covers used,	\$1,000.00	\$2,065.09
	<u> </u>	
REPAIRS, SEWERS, SOUTH DIVISION.		
Labor,	\$3,666.13	
Hardware,	6.21	
Cement,	91.54	
Repairing wagon,	38.45	
Sand,	21.88	
	<u> </u>	
	\$3,824.21	
ADD—		
Brick, Pipe and Covers used,	\$1,000.00	\$4,824.21
	<u> </u>	
REPAIRS, SEWERS, WEST DIVISION.		
Labor,	\$1,864.33	
Cement,	207.90	
Hardware,	6.21	
Repairing Tools,	96.95	
	<u> </u>	
	\$2,175.39	
ADD—		
Brick, Pipe and Covers used,	\$1,800.00	\$3,975.39
	<u> </u>	
CLEANING SEWERS, NORTH DIVISION.		
Labor,	\$3,806.95	\$3,806.95
CLEANING SEWERS, SOUTH DIVISION.		
Labor,	\$7,583.24	
Candles,	19.70	
Grease,	1.40	
	<u> </u>	
	\$7,604.34	\$7,604.34
CLEANING SEWERS, WEST DIVISION.		
Labor,	\$5,904.05	
Repairing Tools,	20.88	
Rope,	79.24	
	<u> </u>	
	\$6,004.17	\$6,004.17
Amounts carried forward,	\$65,266.57	\$181,575.51

	Cash Payment.	True Cost.
Amounts brought forward,	\$65,266.57	\$181,575.51
SEWERAGE STOCK.		
Sheeting,	\$942.57	
Tools,	440.94	
Freight,	16.00	
Repairing Tools,	149.95	
Labor,	234.20	
Nails,	127.50	
	<hr/>	
	\$1,911.16	\$1,911.16
COVERS ACCOUNT.		
Labor,	\$1,928.94	
Lumber,	2,025.21	
Freight,	504.50	
Nails,	399.92	
Pails,	68.50	
Lanterns,	16.50	
	<hr/>	
	\$4,943.57	
DEDUCT—		
Covers used for Sewers, \$4,825.00		
Covers sold,	133.50	\$4,958.50
	<hr/>	
SEWERAGE LOAN INTEREST.		
Remittance to American Exchange National Bank to pay July, 1871 Interest,	\$90,684.01	
Remittance to American Exchange National Bank to pay January, 1872 Interest,	90,721.24	
Interest paid in Chicago,	4,095.00	
Paid River Improvement Fund for its proportion of Taxes for 1871,	203,226.80	
	<hr/>	
	388,727.05	
DEDUCT—		
Amount received from State on account of Interest,	\$184,048.74	204,678.31
	<hr/>	
Amounts carried forward,	\$460,848.35	\$388,164.98

THE BOARD OF PUBLIC WORKS.

137

	Cash Payment.	True Cost.
Amounts brought forward,	\$460,848.35	\$388,164.98

SEWERAGE BRICK.

Brick Purchased,	\$21,184.14	
Labor,	347.70	
		21,531.84

DEDUCT—

Brick charged Sundry Sewers, and Brick sold,	\$32,541.56
---	-------------

PIPE ACCOUNT.

Pipe Purchased,	\$13,753.41	
Labor,	478.53	
		14,231.94

DEDUCT—

Pipe sold and charged Sundry Sewers,	\$19,382.11
---	-------------

OFFICE EXPENSE AND SALARIES.

Salary of Commissioners,	\$4,000.00
Salary of Secretary,	1,000.00
Salary of City Engineer,	1,500.00
Salary of Superintendent,	900.00
Salary of Book-keepers and Clerks,	6,937.61
Office Rent,	1,489.25
Stationery,	1,569.82
Printing,	936.28
Printing 10th Annual Report,	486.67
Advertising,	611.53
Labor,	219.49
Miscellaneous Cash Items,	274.12
Coal,	103.48
Furniture,	139.30
Matches,	18.58
Use Carriage,	13.33
Stamps,	58.33
Subscription to Papers,	31.26
Iron Work,	53
Brooms,	39.06
Ice,	13.70

Amounts carried forward,	\$20,342.34	\$496,612.13	\$388,164.98
----------------------------------	-------------	--------------	--------------

		Cash Payment.	True Cost.
Amounts brought forward,	\$20,342.34	\$496,612.13	\$388,164.98
Cleaning Office,	29.00		
Horse Feed,	15.65		
Moving Safe,	10.00		
Lumber,	42.56		
Car Fares,	25.00		
Hardware,	73.90		
	-----	20,538.45	

DEDUCT—

Amount received for Rent and License,	\$51.00	20,487.45
---	---------	-----------

HOUSE DRAINS.

Salary of Engineers, Clerks, etc.,	\$8,183.31	
Inspectors and Labor,	8,842.63	
Car Fares,	290.00	
Advertising,	605.14	
Constructing Drains,	76.65	
Hardware,	43.50	
Cement,	55.06	
Horse Keeping,	339.18	
Stationery,	9.00	
Permits Refunded,	63.56	
	-----	18,508.03

ADD—

Pipe used,	\$1,950.00
----------------------	------------

DEDUCT—

Amount received for Permits,	\$12,067.45	8,390.58
------------------------------	-------------	----------

STREET INTERSECTIONS.

Labor,	\$13,073.49	
Cement,	3,812.92	
Brick,	2,035.80	
Lumber,	1,070.43	
Hardware,	13.38	
Lanterns,	5.50	
Rope,	9.27	
	-----	20,020.79

Amounts carried forward,	\$555,679.40	\$417,043.01
------------------------------------	--------------	--------------

	Cash Payment.	True Cost.
Amounts brought forward,	\$555,679.40	\$417,043.01
ADD—		
Brick and Covers used,	\$1,596.00	21,616.79
DAMAGE BY FIRE.		
Locating Man Holes,	\$2,150.80	
Lumber,	959.38	
Repairing Wagon,	249.20	
Cement,	105.30	
	<u>3,464.68</u>	
ADD—		
Pipe and Covers destroyed, . . .	\$3,750.00	
Shop and Tools destroyed, . . .	2,861.56	
	<u>6,611.56</u>	10,076.24
SINKING FUND.		
Amount paid Sewerage and River Improvement Sinking Funds for their Proportion of Sewerage Tax for 1871,	86,620.83	86,620.83
CERTIFICATES OF INDEBTEDNESS.		
Temporary Loans,	25,333.33	
DEDUCT—		
Amount received for Tempo- rary Loans,	<u>\$80,200.00</u>	
DOUGLASS PLACE DRAINS.		
Constructing Drains,	881.45	
DEDUCT—		
Amount received for Construct- ing Drains,	<u>\$144.75</u>	736.75
MYRICK AVENUE SEWER.		
Constructing Sewer,	\$1,187.00	
Labor,	19.00	
	<u>1,206.00</u>	
Amounts carried forward,	\$673,185.69	\$536,093.62

	Cash Payment.	True Cost.
Amounts brought forward,	\$673,185.69	\$536,093.62
DEDUCT—		
Amount received for Construct-		
ing Sewers,	\$1,300.00	
MICHIGAN AVENUE SEWER.		
Labor,		361.27
MORGAN STREET SEWER.		
Constructing Sewer,	\$3,395.60	
Labor,	245.10	
		3,640.70
GREEN STREET SEWER.		
Constructing Sewer,	\$1,694.00	
Labor,	65.96	
		1,759.96
SUPERIOR STREET SEWER.		
Labor,		60.00
TWENTY-FOURTH STREET SEWER.		
Constructing Sewer,	\$441.26	
Labor,	54.90	
		496.16
MADISON STREET SEWER.		
Labor,		4.50
TWENTY-THIRD STREET SEWER.		
Constructing Sewer,	\$403.26	
Labor,	48.00	
		451.26
LOOMIS STREET SEWER.		
Constructing Sewer,	\$543.49	
Labor,	31.50	
		574.99
WABASH AVENUE SEWER.		
Labor,		215.00
Amounts carried forward,	\$680,749.53	\$536,093.62

	Cash Payment.	True Cost.
Amounts brought forward, . . .	\$680,749.53	\$536,093.62
HARRISON STREET SEWER.		
Labor,		13.50
THIRD AVENUE SEWER.		
Labor,		9.00
THIRTY-FIFTH STREET SEWER.		
Labor,		123.40
INDIANA AVENUE SEWER.		
Labor,		298.00
ADAMS STREET SEWER.		
Labor,		18.00
WHITNEY STREET SEWER.		
Constructing Sewer, . . .	\$929.70	
Labor,	29.90	959.60
PINE STREET SEWER.		
Constructing Sewer, . . .	\$484.30	
Labor,	37.70	522.00
CALUMET AVENUE SEWER.		
Labor,		28.00
NORTH AVENUE SEWER.		
Constructing Sewer, . . .	563.50	
Labor,	<u>21.00</u>	584.50
EUGENIE STREET SEWER.		
Constructing Sewer, . . .	\$582.50	
Labor,	24.50	607.00
ARCHER AVENUE SEWER.		
Constructing Sewer, . . .	\$987.57	
Labor,	<u>213.25</u>	<u>1,200.82</u>
Amounts carried forward, . . .	\$685,113.35	\$536,093.62

	Cash Payment.	True Cost.
Amounts brought forward,	\$685,113.35	\$536,093.62
NORTHERN AVENUE SEWER.		
Constructing Sewer,	1,650.00	
BLACKHAWK STREET SEWER.		
Constructing Sewer,	\$13,056.13	
Labor,	332.00	
	<hr/>	13,388.13
BLUE ISLAND AVENUE SEWER.		
Constructing Sewer,	\$925.20	
Labor,	98.20	
	<hr/>	1,023.40
HENRY STREET SEWER.		
Constructing Sewer,	\$172.00	
Labor,	15.50	
	<hr/>	187.50
REBECCA STREET SEWER.		
Constructing Sewer,	600.00	
STATE STREET SEWER.		
Labor,	36.50	
HINSDALE STREET SEWER.		
Labor,	14.90	
MOHAWK STREET SEWER.		
Constructing Sewer,	\$1,113.18	
Labor,	63.05	
	<hr/>	1,176.23
QUARRY STREET SEWER.		
Constructing Sewer,	1,196.95	
FRANKLIN STREET SEWER.		
Constructing Sewer,	1,187.20	
	<hr/>	
Amounts carried forward,	\$705,574.16	\$536,093.62

THE BOARD OF PUBLIC WORKS.

143

	Cash Payment.	True Cost.
Amounts brought forward,	\$705,574.16	\$536,093.62
TAYLOR STREET SEWER.		
Labor,	3.80	
SCHILLER STREET SEWER.		
Constructing Sewer,	303.15	
OAKWOOD STREET SEWER.		
Labor,	21.00	
WOOD STREET SEWER.		
Constructing Sewer,	1,516.35	
GROVE STREET SEWER.		
Constructing Sewer,	924.76	
FOURTH STREET SEWER.		
Constructing Sewer,	1,054.50	
RIDGEVILLE STREET SEWER.		
Constructing Sewer,	309.66	
JACKSON STREET SEWER.		
Labor,	21.00	
MILWAUKEE AVENUE SEWER.		
Constructing Sewer,	699.40	
Labor,	120.00	819.40
GETHE STREET SEWER.		
Constructing Sewer,	296.10	
STEWART AVENUE SEWER.		
Cement,	11.70	
CENTRE AVENUE SEWER.		
Labor,	84.00	
Amounts carried forward,	\$710,939.58	\$536,093.62

	Cash Payment.	True Cost.
Amounts brought forward,	\$710,939.58	\$536,093.62
VINE STREET SEWER.		
Labor,	7.60	
OTIS STREET SEWER.		
Labor,	7.60	
PLEASANT STREET SEWER.		
Labor,	7.60	
Total Cash Expenditures,	<u>\$710,962.38</u>	<u>\$536,093.62</u>

SEWERAGE SINKING FUND.

RECEIPTS.

Proportion of Sewerage Tax for 1871,	\$41,632.73
--------------------------------------	-------------

RIVER IMPROVEMENT FUND.

STATEMENT of Receipts and detailed Statement of the Expenditures
by the Board of Public Works from April 1st, 1871, to March
31st, 1872, inclusive:

RECEIPTS.

Amount received from City for Taxes of 1871,	\$203,226.80	
Amount received from Tempo- rary Loans,	276,025.03	
Amount received for Remov- ing Locks,	9,000.00	
Amount received for Stonesold, 13.00		
Total Receipts,		\$488,264.83

EXPENDITURES.

INTEREST ACCOUNT.

	Cash Payment.	True Cost.
Remittance to American Ex- change National Bank to pay July, 1871, Interest, . . .	\$91,788.90	
Remittance to American Ex- change National Bank to pay January, 1872, Interest, .	91,227.50	
Coupons paid by City Treas., 10,535.00		
	\$193,551.40	\$193,551.40

EXPENSE OF SURVEYS AND SALARIES.

Salary of Engineer and Ass'ts, . . .	\$3,128.50	
Salary of Commissioners,	500.00	
	3,628.50	3,628.50
Amounts carried forward,	\$197,179.90	\$197,179.90

	Cash Payment.	True Cost.
Amounts brought forward,	\$197,179.90	\$197,179.90

MISCELLANEOUS EXPENSES.

Labor,	\$12,332.04	
Removing Locks,	8,700.00	
Excursion Party,	2,663.49	
Removing Wall,	300.00	
Carriage Hire,	69.00	
Use of Boats,	60.00	
Miscellaneous,	92.17	24,216.70

DEDUCT—

Amount received for moving		
Locks and Stone sold,	9,013.00	15,203.70

CONTRACTS.

Paid Fox, Howard & Walker,	\$37,735.22	
Paid Fox, Howard & Walker,	68,730.71	
Paid Fox, Howard & Walker,	65,916.60	
Paid Hosch & Horroon,	1,205.57	
Paid C. E. Boyer,	9,286.86	
Paid Carkin & Kimball,	97,396.61	
Paid Hugh Maher,	42,879.30	
Paid Barnard & Gowen,	35,284.49	
Paid J. J. Parry,	75,142.83	
Paid Fox, Howard & Walker,	24,298.24	
	<u>457,876.43</u>	<u>457,876.43</u>
	\$679,273.03	\$670,260.03

RIVER IMPROVEMENT SINKING FUND.

RECEIPTS.

Proportion of Sewerage Tax for 1871,	.	\$44,988.10
--------------------------------------	---	-------------

BOARD OF PUBLIC WORKS APPROPRIATION FUND.

STATEMENT of the Cash Receipts by the Board of Public Works
from April 1, 1871, to March 31, 1872, inclusive, and detailed
Statement of Expenditures during the same time:

RECEIPTS.

Amount of Appropriation by Common	
Council,	\$1,051,122.77
" " Certificates of Indebtedness,	187,757.15
" received from Canal Redemption Fund,	55,000.00
" received from Special Assessments for Expenses,	12,917.63
" received for Permits issued,	6,528.82
" received for sale of Court-house Bell,	4,045.83
" received for Labor,	1,155.58
" received for Repairs State Street Viaduct,	800.00
" received for Repaving,	824.44
" " " Constructing Walk,	245.18
" " " sale of Marble,	292.60
" " " Rent,	166.67
" " " Iron Pipe,	85.59
" " " Lumber sold,	27.28
" " " Damage to Bridges,	50.55
" " " Numbers,	52.50
" " " Surveyor's License,	20.00
	<hr/>
	\$1,321,092.59
Balance unexpended April 1, 1871,	485,918.19
	<hr/>
	\$1,807,010.78

EXPENDITURES.

NORTH DIVISION.

		Cash Payment.	True Cost.
Labor on Streets,	\$33,505.98		
Cleaning Streets,	16,701.16		
Lumber,	3,504.95		
Gravel,	1,811.80		
Macadam,	703.23		
Paving Cement,	350.00		
Cinders,	262.50		
Iron and Nails,	190.75		
Filling,	113.75		
Hardware, Tools, etc., . .	91.39		
Car Fares,	25.00		
Repairing Tools,	12.85		
Rope,	1.75		
		\$57,275.11	
DEDUCT —			
Amount received for			
Repaving, . . . \$76.50			
Amount received for			
Permits, . . . 600.00	676.50		\$56,598.61

SOUTH DIVISION.

Labor on Streets,	\$36,366.44		
Cleaning Streets,	27,532.46		
Lumber,	7,181.11		
Gravel,	2,643.01		
Macadam,	1,068.35		
Iron and Nails,	522.70		
Filling,	380.00		
Cinders,	348.25		
Paving Cement,	208.72		
Repairing Tools,	72.44		
Plows,	29.00		
Hardware and Tools, . . .	77.83		
Car Fares,	20.00		
		76,450.31	
Amounts carried forward,		\$133,725.42	\$56,598.61

	Cash Payment.	True Cost.
Amounts brought forward,	\$133,725.42	\$56,598.61
DEDUCT—		
Amount received for		
Repaving, . . . \$747.94		
Amount received for		
Permits, . . . 1,000.00	<u>1,747.94</u>	74,702.37

WEST DIVISION.

Labor on Streets,	\$95,138.97	
Cleaning Streets,	26,730.23	
Lumber,	17,513.46	
Macadam,	6,758.27	
Filling,	4,776.23	
Iron and Nails,	1,400.45	
Cinders,	754.00	
Paving Cement,	291.22	
Lease of Lumber Lot,	250.00	
Gravel,	116.35	
Freight,	120.00	
Repairing Tools,	25.55	
Hardware and Tools,	182.07	
1 Plow,	9.00	
Car Fares,	<u>20.00</u>	
		154,085.80

DEDUCT—		
Amount received for		
Labor, . . . \$ 22.00		
Amount received for		
Permits, . . . 1,519.46	<u>\$1,541.46</u>	152,544.34

SIDEWALKS, NORTH DIVISION.

Building Walk,	\$4,856.23	
Salary of Superintendent,	400.00	
“ Inspectors,	<u>1,225.00</u>	
		6,481.23

DEDUCT—		
Amount received for Construct-		
ing Walk,	<u>\$7.25</u>	6,473.98
Amounts carried forward,	\$294,292.45	\$290,319.30

	Cash Payment.	True Cost.
Amounts brought forward,	\$294,292.45	\$290,319.30
SIDEWALKS, SOUTH DIVISION.		
Building Walk,	\$7,842.80	
Salary of Inspectors,	2,682.50	
" Superintendent,	400.00	
		10,925.30
DEDUCT—		
Amount received for Construct-		
ing Walk,	74.68	10,850.62
SIDEWALKS, WEST DIVISION.		
Building Walk,	\$2,602.19	
Salary of Inspector,	3,365.79	
Salary of Superintendent,	400.00	
		6,367.98
DEDUCT—		
Amount received for Con-		
structing Walk,	163.25	6,204.73
OFFICE EXPENSES AND SALARIES.		
Salary of Commissioner,	\$4,000.00	
Salary of Secretary,	1,000.00	
Salary of Superintendent,	900.00	
Salary of City Engineer,	1,500.00	
Salary of Book-keepers and Clerks,	7,244.53	
Salary of Special Ass't Departm't,	20,134.21	
Salary of Draughtsman,	8,800.00	
Advertising,	9,927.69	
Rent of Office,	1,512.25	
Stationery,	1,374.68	
Printing,	1,195.21	
Blank Books,	845.29	
Printing 10th Annual Report,	743.67	
Cost of Proceedings refunded,	650.00	
Furniture,	609.46	
Notary Fees,	196.00	
Hardware,	188.84	
Brooms, Dusters, etc.,	100.81	
Amounts carried forward,	\$60,922.64	\$311,585.73 \$307,374.65

		Cash Payment.	True Cost.
Amounts brought forward,	\$60,922.64	\$311,585.73	\$307,374.65
Car Fares,	163.04		
Revenue Stamps,	100.00		
Miscellaneous Cash Items,	119.10		
Use of Carriage,	24.34		
Horse Keeping,	66.65		
Coal,	47.75		
6 Vols. of Republicans,	72.00		
Gas used,	24.50		
Plumbing,	9.75		
Cleaning Office,	67.60		
Lumber,	18.66		
Ice,	13.70		
Subscription to Papers,	29.98		
Moving Safe,	10.00		
		61,689.71	

DEDUCT—

Amount received			
from Assessm'ts, \$12,917.63			
Amount received			
from Rent,	50.00		
Amount received			
from License,	20.55	\$12,988.18	48,701.53

TEMPORARY CITY HALL.

Carpentry Work,	\$33,694.93		
Masonry Work,	9,227.85		
Plastering,	4,367.44		
Steam Fitting,	4,108.79		
Plumbing and Gas Fitting,	2,908.90		
Painting,	2,570.98		
Furniture	2,587.86		
Brick,	3,668.82		
Labor of Sewerage men,	1,396.65		
Roofing,	1,664.42		
Iron Work,	1,112.21		
Coal and Coke,	301.39		
Gas Fixtures,	697.04		
Services of Architect,	300.00		
Amounts carried forward,	\$68,607.28	\$373,275.44	\$356,076.18

		Cash Payment.	True Cost.
Amounts brought forward,	\$68,607.28	\$373,275.44	\$356,076.18
One Force Pump,	225.00		
Wire Work,	205.87		
Gas used,	177.00		
Sewer Pipe,	104.07		
Twenty-one Salamanders, .	105.00		
Whitewashing Vaults, . .	35.00		
Cement,	14.69		
		69,473.91	69,473.91

LINCOLN PARK.

For Grading, Cindering, Plant-
ing Trees, and Keeping Park
in Repair,

	\$13,378.19
Water Closets,	1,289.20
Animal Feed,	652.46
Sprinkling,	681.75
Wire Work,	505.50
Plumbing,	237.50
Hardware,	117.45
Lumber,	259.20
Lawn Mower,	73.15
Painting,	56.89
Gravel,	3.04

17,254.33

DEDUCT—

Amount received for Labor, .	\$143.75	17,110.58
------------------------------	----------	-----------

WASHINGTON PARK.

Four Turn Stiles,	\$260.00
Labor,	136.00
Painting,	69.33
Lumber,	141.10

606.43

606.43

LAKE PARK.

Grading, Cindering and Build-
ing Walks,

	\$26,436.24
Filling,	8,048.62

Amounts carried forward,	\$34,484.86	\$460,610.11	\$443,267.10
--------------------------	-------------	--------------	--------------

		Cash Payment.	True Cost.
Amounts brought forward,	\$34,484.86	\$460,610.11	\$443,267.10
Plumbing,	758.96		
Planting Trees,	660.00		
Cut Stone,	490.00		
Spawls,	268.04		
Iron Vases,	194.65		
Hardware	38.90		
Grass Seed,	21.61		
Lumber,	29.50		
Painting,	9.23		
		36,955.75	

DEDUCT—

Received for Labor,	\$49.00		36,906.75
-------------------------------	---------	--	-----------

DEARBORN PARK.

Sprinkling,		204.07	204.07
-----------------------	--	--------	--------

ELLIS PARK.

Labor Keeping Park in Repair,	\$1,748.50		
Gates,	469.25		
Trees,	182.75		
Plumbing,	60.30		
Hardware,	24.60		
Lime,	15.35		
Lawn Mower,	27.15		
Painting,	41.41		
		2,569.31	2,569.31

UNION PARK.

Labor Keeping Park in Repair,	\$2,502.82		
Animal Feed,	683.13		
Plumbing,	181.10		
Gravel,	246.75		
Hardware,	64.02		
Blacksmithing,	92.35		
Painting,	43.88		
Trees,	68.00		
Grass Seed,	27.95		
Wire Work,	29.95		
		3,939.95	3,939.95
Amounts carried forward,		\$504,279.19	\$486,887.18

		Cash Payment.	True Cost.
Amounts brought forward,		\$504,279.19	\$486,887.18
JEFFERSON PARK.			
Labor Keeping Park in Repair,			
Building Bridges, Con-			
structing Walks, etc.,	\$3,872.45		
Trees,	1,291.00		
Gravel,	496.99		
Cut Stone,	529.80		
Vases,	221.50		
Lumber,	86.20		
Lawn Mower,	68.34		
Painting,	88.70		
Hardware,	84.17		
Iron Work,	7.60		
		6,746.75	6,746.75
WICKER PARK.			
Labor,		47.80	47.80
VERNON PARK.			
Labor Building Walks, Cin-			
dering, and Keeping Park			
in Repair,	\$1,942.61		
Plumbing,	394.09		
Gravel,	140.00		
Hardware,	18.80		
		2,495.50	2,495.50
PUBLIC BUILDINGS.			
CITY HALL.			
Transfer to City Hall Fund, .	\$30,000.00		
Gas used,	6,322.08		
Laying Walk,	3,930.08		
Coal,	2,720.53		
Engineer and Assistants, .	2,461.87		
Four Clock Dials,	1,500.00		
Rent of Office on Randolph St.,	1,219.33		
Janitor and Assistants, .	1,797.37		
Amounts carried forward,	\$49,951.26	\$513,569.24	\$496,177.23

		Cash Payment.	True Cost.
Amounts brought forward,	\$49,951.26	\$513,569.24	\$496,177.23
Plumbing and Gas Fitting,	803.29		
Carpentry Work,	779.30		
Furniture,	203.78		
Painting and Glazing,	392.03		
Iron Work,	42.53		
Repairing Boiler,	38.84		
Covering Clock Dials,	113.55		
Labor on Grounds,	600.02		
Ice,	145.98		
Moving Bell and Safes,	193.74		
Letter Boxes,	68.00		
Repairing Roof,	275.89		
Advertising,	96.88		
Hardware,	334.13		
		54,039.22	54,039.22

ARMORY BUILDING.

Raising Building,	\$7,000.00		
Masonry,	4,286.54		
Inspectors,	57.50		
Lightning Rods,	68.25		
Lumber,	201.61		
		11,613.90	11,613.90

CHICAGO HARBOR.

Dredging,	\$17,654.09		
Constructing Dock,	4,058.66		
Harbor Master,	5,533.15		
Use of Tug,	240.00		
Inspector,	552.50		
Repairing Scow,	547.96		
Lumber,	39.26		
Salary of Engineer,	125.00		
Raising Vessels,	2,000.00		
		30,750.62	30,750.62

PUBLIC BENEFITS.

Paving Intersection of Streets,	\$176,370.86		
Improvement of Alleys,	2,379.43		
Amounts carried forward,	\$178,750.29	\$609,972.98	\$592,580.97

		Cash Payment.	True Cost.
Amounts brought forward,	\$178,750.29	\$609,972.98	\$592,580.97
Improvement of Sidewalks,	214.14		
" " Service Pipe,	248.94		
" " Drains,	26.20		
		179,239.57	179,239.57

LAND DAMAGES AT 22D STREET.

Paid J. H. Rees & Co. for Land,	\$3,382.00		
Dredging,	4,027.47		
Moving Lumber,	175.00		
		7,584.47	7,584.47

LAND DAMAGES AT ADAMS STREET.

Dredging,	\$1,499.99		
Constructing Dock,	1,344.00		
		2,843.99	2,843.99

LAND DAMAGES AT POLK STREET.

Paid C. C. Chase, School Agent,			
for Land,	\$11,795.00		
Dredging,	4,000.00		
		15,795.00	15,795.00

WASHINGTON STREET TUNNEL.

Salary of Engineer,	\$1,200.00		
Labor,	2,234.56		
Coal,	136.00		
Plumbing and Gas Fitting,	153.56		
Hardware,	8.25		
Lumber,	67.13		
Nails,	1.25		
Alcohol,	23.40		
Salt,	27.70		
		3,851.85	3,851.85

LA SALLE STREET TUNNEL.

Transfer to La Salle Street			
Tunnel Fund,	\$48,733.36		
Salary of Engineer and Assist-			
ant,	1,720.66		
Iron Work,	514.77		
Alcohol,	21.30		
Lumber,	62.50		
Amounts carried forward,	\$51,052.59	\$819,287.86	\$801,895.85

THE BOARD OF PUBLIC WORKS.

159

		Cash Payment.	True Cost.
Amounts brought forward,	\$51,052.59	\$819,287.86	\$801,895.85
Coal,	70.00		
Repairing Tools,	9.85		
Oil,	23.20		
Sprinkling,	100.00		
Hardware,	19.90		
Tools,	99.81		
Plumbing and Gas Fitting,	65.81		
Salt,	22.00		
		51,463.16	51,463.16

HOUSE-MOVING AND STREET PERMITS.

Salary of Special Constables,	\$3,000.00		
Stationery,	348.26		
Badges,	48.00		
Permit Refunded,	5.00		
Printing,	8.10		
		3,409.36	3,409.36

CONFISCATED PROPERTY.

Storage of Marble,	80.00	80.00
------------------------------	-------	-------

STREET LAMPS.

Labor Setting and Repairing			
Posts,	\$3,947.67		
Lamps,	3,177.50		
Posts,	652.75		
Burners,	70.00		
Lumber,	139.26		
		7,987.18	7,987.18

STREET SIGNS.

Labor Putting Up Signs,	150.00	150.00
-----------------------------------	--------	--------

PUBLIC HYDRANTS.

Plumbing,	744.96	744.96
---------------------	--------	--------

PUMPING AT BRIDGEPORT.

Labor,	2,000.00	2,000.00
------------------	----------	----------

REMOVING CANAL LOCKS.

Amount Paid,	9,000.00	9,000.00
Amounts carried forward,	\$894,122.52	\$876,730.51

	Cash Payment.	True Cost.
Amounts brought forward, . . .	\$894,122.52	\$876,730.51
CITY TIME.		
Furnishing Time, . . .	624.97	624.97
POUNDS.		
Nails,	\$ 16.38	
Cottage House,	500.00	
Lumber,	138.82	
Laying Walk,	371.39	
Rent of Lot,	150.00	
	1,176.59	1,176.59
HOUSE NUMBERS.		
Salary of Draughtsman, . .	1,112.23	
DEDUCT—		
Amount received for Numbers,	52.50	1,059.73
ERIE STREET VIADUCT.		
Paid to A. Wallbaum & Co., Contractors,	22,142.06	22,142.06
CERTIFICATES OF INDEBTEDNESS.		
Temporary Loans Paid,	57,891.30	
DEDUCT—		
Amount received from Tem- porary Loans,	\$187,757.15	
BRIDGE DEPARTMENT.		
Salary of Bridge Tenders,	33,189.53	
Work Repairing Bridges,	14,859.58	
Lumber,	3,712.63	
Castings,	1,388.51	
Driving Piles,	1,380.80	
Coal,	616.50	
Draughtsman,	999.88	
Nails and Spike,	741.89	
Paint and Oil,	459.79	
Bells,	288.20	
Amounts carried forward,	\$58,173.63	\$977,069.67
		\$901,733.86

THE BOARD OF PUBLIC WORKS.

161

	Cash Payment.	True Cost.
Amounts brought forward, \$57,637.31	\$977,069.67	\$901,733.86
Gathering Up Old Iron,	536.32	
Waste and Packing,	175.67	
Hardware,	131.77	
Chain,	159.20	
Damages,	57.39	
Rope,	85.57	
Spawls,	12.50	
Cement,	83.24	
Masonry,	62.50	
Advertising,	51.42	
Brooms,	83.00	
Lanterns, etc.,	33.50	
Clerks,	28.00	
	<u>59,137.39</u>	
DEDUCT—		
Amount received for Repairing		
State St. Viaduct,	\$800.00	
" received for Damages,	50.00	
" received for Labor and		
Material,	940.83	
" received for Voucher		
Canceled,	14.28	
	<u>\$1,805.11</u>	
		57,332.28
RUSH STREET BRIDGE.		
Paid O. B. Green, Substructure,	\$5,860.00	
" " " " Driving Piles	30.40	
" Earnshaw & Goble, La-		
bor and Material,	1,003.75	
" Singer & Talcott, Dimen-		
sion Stone,	472.93	
	<u>7,367.08</u>	
		7,367.08
CLARK STREET BRIDGE.		
Paid Earnshaw & Goble, Sub-		
structure,	\$12,587.39	
" Fox & Howard, Super-		
structure,	31,200.00	
Driving Piles,	1,232.47	
Lumber,	982.32	
Inspector,	203.25	
	<u>46,205.43</u>	
		46,205.43
Amounts carried forward,	\$1,089,779.57	\$1,012,638.65

	Cash Payment.	True Cost.
Amounts brought forward, . . .	\$1,089,779.57	\$1,012,638.65
VAN BUREN STREET BRIDGE.		
Paid E. Sweet, Jr. & Co., Con- structing Bridge, . . .	\$13,200.00	
“ Earnshaw & Goble, La- bor and Material, . . .	575.73	
Lumber,	210.97	
Labor,	321.24	
	14,307.94	14,307.94
POLK STREET BRIDGE.		
Paid E. Sweet, Jr. & Co., Es- timate No. 1,	8,068.63	8,068.63
ERIE STREET BRIDGE.		
Paid Fox & Howard, Con- structing Bridge, . . .	14,690.30	14,690.30
CHICAGO AVENUE BRIDGE.		
Paid Fox & Howard, Esti- mate No. 1,	10,400.00	10,400.00
ADAMS STREET BRIDGE.		
Paid Fox & Howard, Esti- mate No. 1,	6,404.45	6,404.45
DIVISION STREET BRIDGE.		
Paid Fox & Howard, Final Estimate,	700.00	700.00
TWENTY-SECOND STREET BRIDGE.		
Paid Fox & Howard, Con- structing Bridge, . . .	11,018.39	11,018.39
Total Cash Expenditure, . . .	\$1,155,369.28	\$1,078,228.36

LA SALLE STREET TUNNEL FUND.

STATEMENT of the Receipts and Expenditures by the Board of Public Works from April 1, 1871, to March 31, 1872:

RECEIPTS.

Amount received from Appropriation,	\$48,733.36	
Amount received from Temporary Loans,	<u>46,015.18</u>	
		\$94,748.54

EXPENDITURES.

MISCELLANEOUS EXPENSE.		Cash Payment.	True Cost.
Cement,	\$6,986.48		
Entrance Houses,	2,000.00		
Labor,	3,111.06		
Rent of Building Damaged,	2,335.45		
Engineers, Draughtsman and Inspectors,	1,149.98		
Plumbing,	437.41		
Iron Work,	408.00		
Gas Fitting,	678.88		
Carpentry Work,	520.00		
Whitewashing,	300.00		
Interest Credited in Error,	158.46		
Advertising,	34.88		
Tools,	<u>55.00</u>		
		\$18,175.60	\$18,175.60
CONTRACTS.			
Paid R. E. Moss, on Account,		<u>132,896.83</u>	<u>132,896.83</u>
Amounts carried forward,		\$151,072.43	\$151,072.43

	Cash Payment.	True Cost.
Amounts brought forward,	\$151,072.43	\$151,072.43

CERTIFICATES OF INDEBTEDNESS.

Paid Temporary Loans,	47,987.06
-------------------------------	-----------

DEDUCT—

Amount received for Temporary Loans,	\$46,015.18	1,971.88
Total Cash Expenditures,	\$199,059.49	\$153,044.31

CITY HALL FUND.

STATEMENT showing the Receipts, and detailed account of Work done, during the year ending March 31, 1872:

RECEIPTS.

Amount received from Appropriation,	\$30,000.00	
Amount received from Voucher Canceled,	5,000.00	
Amount received from Certificates of Indebtedness,	7,846.16	
Total Receipts,		\$42,846.16

EXPENDITURES.

Furniture,	\$6,238.45		
Architects' Fees,	1,000.00		
Carpentry Work,	1,240.32		
Iron Work,	2,504.33		
Carpets,	4,945.65		
Plastering,	1,000.00		
Masonry Work,	2,962.08		
Heating Apparatus,	1,368.12		
Plumbing,	2,500.00		
Painting,	2,801.39		
Total Cash Expenditures,		<u>\$26,560.34</u>	<u>\$26,560.34</u>

CITY BRIDEWELL FUND.

STATEMENT of the Expenditures by the Board of Public Works from
April 1, 1871, to March 31, 1872:

Cost of Grounds,	\$29,578.00		
Gas Works,	6,000.00		
Labor,	6,338.59		
Carpentry Work,	1,558.00		
Sewer Pipe,	1,580.18		
Heating Apparatus,	1,597.48		
Carpeting,	1,351.96		
Lumber,	1,545.71		
Plumbing,	2,247.39		
Bedsteads,	2,155.00		
Bedding,	1,832.63		
Furniture,	2,383.00		
Mason and Cut Stone Work,	2,148.62		
Cisterns,	1,153.60		
Brick Barn,	2,830.00		
Advertising,	124.02		
2 Horses,	394.40		
Iron Work,	263.54		
Nails,	156.83		
Tools,	201.50		
Brick,	190.00		
Gas Fitting,	666.99		
Crockery,	371.80		
Constructing Walks,	314.14		
Passenger Wagon,	775.00		
Mush Kettles,	159.10		
Painting,	924.09		
Harness,	61.75		
Miscellaneous,	6.00		
Total Cash Expenditures,		\$68,909.32	\$68,909.32

RECAPITULATION.

RECEIPTS.

Water Fund,	\$1,017,345.39
Sewerage Fund,	978,471.59
Sewerage Sinking Fund,	41,632.73
River Improvement Fund,	488,264.83
River Improvement Sinking Fund,	44,988.10
Appropriation Fund,	1,321,092.59
Tunnel Fund,	94,748.54
City Hall Fund,	42,846.16
Totals,	<u>\$4,029,389.93</u>

EXPENDITURES.

Water Fund,	\$1,087,846.70
Sewerage Fund,	710,962.38
River Improvement Fund,	679,273.03
Appropriation Fund,	1,155,369.28
Tunnel Fund,	199,059.49
City Hall Fund,	26,560.34
City Bridewell Fund,	68,909.32
Totals,	<u>\$3,927,980.54</u>

Respectfully submitted.

E. M. JOHNSON,

Book-keeper.

APPENDIX.

LAKE TUNNEL CONTRACT AND SPECIFICATIONS.

CONTRACTORS' BOND.

KNOW ALL MEN BY THESE PRESENTS, That we, James Steel and John E. McMahon, comprising the firm of Steel & McMahon, as principals, and George Steel, J. McArthur, John Alston and S. McKichan, as sureties, of the County of Cook and State of Illinois, are held and firmly bound unto the City of Chicago, in the penal sum of One Hundred Thousand Dollars (\$100,000), lawful money of the United States, for the payment of which sum of money, well and truly to be made, we bind ourselves, our heirs, executors and administrators, jointly and severally, firmly by these presents.

Sealed with our seals and dated this 4th day of May, A. D. 1872.

The Condition of the above Obligation is such that, whereas, the above bounden Steel & McMahon have entered into a certain contract with the City of Chicago, bearing date the 4th day of May, A. D. 1872, for the construction of a Tunnel from the lot now occupied by the Pumping Works of the Chicago Water Works, and extending two miles out under Lake Michigan to the present Lake Tunnel Crib, and also for keeping the same in perfect repair for one year after the same shall have been completed.

Now, if the said Steel and McMahon shall, in all respects, well and truly keep and perform the said contract on their part, in accordance

with the terms thereof, and the plans and specifications therein referred to, and, further, shall indemnify and save harmless the said City of Chicago from any loss, damage, cost, charge or expense to which said City shall be subjected by reason of any failure of the said Steel & McMahon in the premises aforesaid, then this obligation to be null and void, otherwise to be and remain in full force and effect.

JAMES STEEL, [SEAL.]

JOHN E. McMAHON, [SEAL.]

GEORGE STEEL, [SEAL.]

J. McARTHUR, [SEAL.]

JOHN ALSTON, [SEAL.]

S. McKICHAN, [SEAL.]

CONTRACT FOR WORK.

THIS AGREEMENT, Made and concluded this 4th day of May, A. D. 1872, between James Steel and John E. McMahon, comprising the firm of Steel & McMahon, of the City of Chicago, and State of Illinois, party of the first part, and the City of Chicago of the second part :

Witnesseth, That, whereas, the said City of Chicago did on or about the 24th day of November, A. D. 1870, by its Board of Public Works, in pursuance of the authority upon such board conferred, cause the following advertisement for proposals to be made, to-wit :

PROPOSALS FOR THE CONSTRUCTION OF THE NEW LAKE TUNNEL FOR
THE CHICAGO WATER WORKS.

OFFICE OF THE BOARD OF PUBLIC WORKS,
CHICAGO, November 24th, 1870.

Scaled Proposals will be received by the Board of Public Works, at their office until 11 A. M. Wednesday, December 7th, for the construction of a Tunnel from the pumping works of the Chicago Water Works to the lake Tunnel Crib, according to plans and specifications on file at said office. This new tunnel will be about fifty feet distant from the present lake tunnel, and parallel to it, and will extend two miles out under the lake. The tunnel will be lined with brick masonry, and will have a clear inside width of seven feet and two inches. Proposals are invited in two ways, viz: 1. The contractor will furnish everything. 2. The contractor will furnish everything excepting bricks.

Proposals must be addressed to the Board of Public Works, indorsed "Proposals for Lake Tunnel," and be accompanied with the usual \$200 bond, with sureties, to be approved by the Board. The Board reserves the right to reject any bid not in accordance with the conditions of this advertisement, or to reject all bids; and no proposals will be accepted unless in due form, and unless the party offering it shall give evidence satisfactory to the Board that he has necessary skill, experience, energy and ability for doing the work, is trustworthy and has sufficient pecuniary resources.

J. McARTHUR, W. H. CARTER, R. PRINDIVILLE,	}	Board of Public Works.
--	---	---------------------------

And, whereas, in response thereto said Steel & McMahon (among others) did make proposals for doing of said work, and the contract for doing the same, was, on the 17th day of December, A. D. 1870, awarded to said Steel & McMahon, and the signing and execution of said contract by the parties hereto was prevented by a certain Writ of Injunction issued out of the Circuit Court of Cook County, in a certain suit wherein John Kelley and Michael Hallanin were complainants, and the City of Chicago, John McArthur, William H. Carter and Redmond Prindiville, Commissioners of the Board of Public Works of the City of Chicago, and James Steel and John E. McMahon were defendants, dated the 23rd of December, A. D. 1870, and served on said City the —— day of December, A. D. 1870, and the said suit was finally determined and said injunction finally dissolved by an opinion of the Supreme Court of the State of Illinois, filed in the Clerk's office of said Court on the 11th day of April, A. D. 1872.

Now, Therefore, this agreement further witnesseth, that the said party of the first part, for and in consideration of the payments to be to them made by the said City of Chicago, as hereinafter set forth, hereby covenant and agree to construct, complete and put in readiness for use, and keep in perfect repair for one year after the same shall have been faithfully completed to the satisfaction of the Board of Public Works of said City, a Tunnel from the lot now occupied by the pumping works of the Chicago Water Works, and extending two miles out under Lake Michigan to the present lake Tunnel Crib, with appurtenances to the same, and to take the risk of all disturbing causes and obstacles which may occur in the construction of said tunnel and appurtenances, and in keeping the same in perfect repair for one year, whether under or above ground, from irruption of waters, springs, quicksands, rocks, waves, winds or storms, or of any other nature or kind; the said contractors hereby agreeing to furnish all the material of every kind required in the construction and completion of the work covered by this contract, the compensation for the said materials being included in the sum herein specified as the contract price; and they also agree to furnish, at their own proper

cost and charges, all machinery, fixtures, structures and tools of every kind needed, or used in the same, and without charge to the City. Said work to be done in accordance with plans prepared for the doing of the same, on file in the office of the Board of Public Works of said City, and with the specifications appended hereto, and made a part of this contract; said work to be commenced forthwith; to progress regularly and uninterruptedly after it shall have been begun, excepting as shall be otherwise ordered by said Board, and be finished and fully completed on or before the First day of April, A. D. 1873, the time of commencement, rate of progress and time of completion being essential conditions of this contract.

All the work shall be executed in the best and most workmanlike manner, and no improper materials shall be used, but all materials of every kind shall fully answer the specifications, or, if not particularly specified, shall be suitable for the place where used.

Should the Board of Public Works deem it proper or necessary, in the execution of the work, to make any alterations which shall increase or diminish the expense, such alterations shall not vitiate or annul the contract or agreement hereby entered into, but the said Board shall determine the value of the work so added or omitted, such value to be added to or to be deducted from the contract price, as the case may be.

The whole of the work shall be commenced and carried on when and where the Board of Public Works shall direct, and it shall also be carried on regularly, so as to give the necessary time for each part to settle and harden, and also for other purposes as the Board may require. In case the Board of Public Works shall think that this is not sufficiently heeded, they may order more men to be employed upon the work; and if they shall think the work proceeding too rapidly, they may order the employment of a less number of men. Should the weather be unusually wet, or so cold and frosty that any part of the work cannot be done in a proper manner, or with due regard to durability, or should such be the case from any other cause, then the Board of Public Works may order such part of the work to be suspended altogether until a more suitable season, in which case

the party of the first part will cover and otherwise sufficiently protect the several parts of the work, so that they will not be injured by the weather.

The said party of the first part hereby covenant and agree that if, in the prosecution of said work, it shall be necessary to dig up, use or occupy any street, alley, highway or public grounds of said city, to erect and maintain such strong and substantial barriers, and also, during the night time, such lights, as will effectually prevent the happening of any accident or harm to life, limb or property, in consequence of such digging up, use or occupancy of said street, alley, highway, or public ground; and it is further covenanted and agreed, that the said party of the first part shall be liable for all damages occasioned by the digging up, use or occupancy of any street, alley, highway or public grounds, or which may result therefrom, or which may result from the carelessness of such contractor, his or their agents, employes or workmen.

This agreement shall not be assigned, nor any part of the work sub-contracted, without the written consent of this Board endorsed hereon; and in no case shall such consent relieve the party of the first part from the obligations herein entered into by the same, or change the terms of this agreement.

It is hereby provided and agreed, that the said work shall be prosecuted with such force as the Board of Public Works shall deem adequate to its completion within the time specified, and if at any time the said party of the first part shall refuse or neglect to prosecute the work with a force sufficient, in the opinion of said Board, for its completion within said specified time, or if, in any event, the said party of the first part shall fail to proceed with the work in accordance with the requirements and conditions of this agreement, that the said City, by its Board of Public Works, shall have full right and authority to take the work out of the hands of the said party of the first part, and to employ other workmen to complete the unfinished work, and to deduct the expense thereof from any money that may be due and owing to said party of the first part on account

of the work, or to re-let the same to other contractors, as provided for hereinafter.

And the said party of the first part covenant and agree to perform all of said work under the immediate direction and superintendence of the Board of Public Works of the City of Chicago, and to their entire satisfaction, approval and acceptance. All material used and all labor performed shall be subject to the inspection and the approval or rejection of said Board; and the said City of Chicago hereby reserves to its Board of Public Works the right finally to decide all questions arising as to the proper performance of said work, and as to whether the rate of progress thereon is such as to correspond with the conditions of this contract; and if the said work shall not be begun at the time herein stipulated, or if the rate at which said work shall be performed shall not in the judgment of said Board be such as to insure its progress and completion in the time and manner herein stipulated, or if said work shall be wholly or in part improperly constructed, then to declare this contract forfeited, either as to a portion or the whole of said work, and to re-let the same, or to order the entire re-construction of said work if improperly done; and in such case of default, or in any case of default, to adjust the difference of damage or price, (if any there be,) which, according to the just and reasonable interpretation of this contract, the said contractors should in the opinion of said Board pay to the said City for any failure to properly commence and prosecute, or to properly construct said work in all respects, according to the conditions hereinbefore specified, or for any other default; and it is hereby understood and agreed, that for any amount of damage or price determined by said Board to be paid to said City by said contractors for any such default, or for any money paid out by said City on account of said contractors in consequence of any default, there shall be applied in payment thereof a like amount of any money that may be due and owing to said party of the first part, on account of said work, so far as there may be any such money, and so far as the same shall be sufficient: and if there shall not be a sufficient amount retained from

the said party of the first part, then and in such case the amount to be paid to the said City, in consequence of such default, shall be a just claim against said contractors and their bondsmen.

In case the said Board of Public Works shall deem it necessary to declare any portion or section of said work forfeited, it is hereby expressly stipulated and understood such declaration of forfeiture shall not in any way relieve the contractors from the covenant and conditions of this contract, but the same shall be and remain valid and binding on said contractors.

And it is understood and agreed that no claim whatever will be made by the said party of the first part for extra work or material, or for a greater amount of money than is herein stipulated to be paid, unless some changes in or additions to said work, requiring additional outlay by said party of the first part, shall first have been ordered, in writing, by the said Board of Public Works.

The said City of Chicago hereby covenants and agrees, in consideration of the covenants and agreements in this contract specified, to be kept and performed by the said party of the first part, to pay to said party of the first part when this contract shall be wholly carried out and completed on the part of said contractors and when said work shall have been accepted by said Board, at the rates specified in the schedule of prices, or form of proposal appended herewith. When the said Tunnel shall be completed the said contractors will give written notice thereof to the said Board, and its acceptance by the Board will also be by written notice to such effect.

No payments will be made either during the progress of the work or at its completion excepting on work in place and what will constitute a portion of said Tunnel when finished.

It is also agreed by said City, that if the rate of progress shall be satisfactory to said Board of Public Works, estimates in its usual form will be issued to said party of the first part, during the making of said improvements, for eighty-five (85) per cent. of the value of the work done and in place at the time of issuing such estimates, the remaining fifteen (15) per cent. being reserved until the final completion and acceptance of said work.

In Testimony Whereof, The said party of the first part have hereto set their hands and seals, and the said City of Chicago has caused the signatures of the Commissioners of its Board of Public Works to be hereto affixed, the day and year first above written.

JAMES STEEL, [SEAL.]

JOHN E. McMAHON, [SEAL.]

W. H. CARTER, }
R. PRINDIVILLE, } *Commissioners of the*
J. K. THOMPSON, } *Board of Public Works.*

(Specifications referred to in foregoing Contract.)

BOARD OF PUBLIC WORKS,
CHICAGO, Sept. 27, 1870.

SPECIFICATIONS FOR THE NEW LAKE TUNNEL.

LOCATION AND GENERAL DESCRIPTION.

The tunnel is to commence, at such point as may be selected by the Board of Public Works, on the lot now occupied by the Pumping Works of the city of Chicago, at the east end of Chicago avenue and on the shore of Lake Michigan, and to extend two miles out under the lake, in a straight line, parallel with, and about fifty feet from, the present Lake Tunnel.

The bottom of the inside surface of the east end of the tunnel shall be seventy feet below the ordinary level of the lake, or sixty-eight feet below what is usually known as "City Datum;" and the bottom surface shall descend uniformly at the rate of six inches per mile to the west end of the tunnel.

There are to be one land and one lake shaft; the land shaft at the west end, and the lake shaft at the east end, in the well of the present Lake Tunnel Crib.

THE LAND SHAFT.

This will be located near and in the rear of the present Pumping Works of this city, and is to be ten feet in diameter to the bottom of the sump, which is to be five feet below the bottom of the tunnel.

The whole of the shaft is to be lined with brick masonry twelve inches thick. The masonry is to be built of hard-burnt, clear-ringing and well-formed bricks, free from lime, not less than eight inches long, two and a quarter inches thick, and four inches wide, to be laid in cement mortar. The upper thirty-five feet to be built on a cast-iron shoe, and to be held firmly together by wrought-iron rods and bolts, as shown on the drawings; and after being allowed to set three or four days, it will be sunk by excavating the earth from within to the required depth.

The outside of the upper thirty-five feet to be laid true and smooth, and be covered with a double coating of asphalt one-half inch thick.

The courses must be horizontal; the inside surface of the shaft must be true and cylindrical, and the joints between the bricks not over half an inch thick. All the joints in the masonry must be perfectly filled by pressing the brick into the cement mortar, and not by pressing mortar between the brick.

The cement is to be equal to that known as the best of Clark's La Salle, and the mortar to be made by mixing one measure of clean, sharp sand with one of cement, and used as soon as possible after being mixed.

Whatever timber, lumber or other materials may be necessary to support the earth around the shaft, before the masonry can be built, must be furnished and put in by the contractor.

The tunnel is to be continued fifty feet westerly from this shaft, of the same form, size and mode of construction as that easterly of this shaft, and terminated by hemispherical masonry.

A circular opening, five feet in diameter, is to be groined into the northerly side of the shaft, in such position as the Board of Public Works shall designate.

Three such gate-frames as the said Board may furnish shall be built into the masonry of this shaft. Two to be of seven feet opening and one of five feet.

LAKE SHAFT.

The vertical shaft shall be a circular cylinder eight feet six inches in exterior diameter, sunk in such position within the inner chamber of the present Crib as the Board of Public Works shall direct.

This cylinder shall be of hard, grey cast-iron, sound and free from honey-comb or other defects, and homogeneous in its structure.

The thickness of the metal shall be two and one-fourth inches, and uniform.

The cylinder, except the top and bottom sections, shall be cast in sections ten feet long each, with interior flanges two inches thick and three inches wide, measuring from the inside surface of the cylinder. These flanges shall be set back one-half an inch from the ends of the sections, and shall be drilled for forty-eight one-inch bolts. The ends of the several sections shall be turned to an accurate bearing two and one-fourth inches in width, so as to make air-tight joints, the planes of the ends being accurately perpendicular to the axis of the cylinder. The sections shall be united at each joint by forty-eight one-inch bolts with hexagonal heads and nuts, all of the very best quality of wrought-iron. The sections shall be truly circular, in cross sections, and of equal diameters, so as to make smooth and even joints. The bottom section, seven feet six inches in length, will have no flange at the lower end, where it will be chamfered to a cutting-edge one-fourth of an inch in thickness. This chamfer will run back evenly to a distance of six inches from the end of the section.

The top section shall be cast of such length as the said Board shall direct, to bring the top of the cylinder when sunk to the requisite height above the water surface. The second section from the top shall have three openings, each thirty-nine inches wide and fifty-six inches high, provided with gates, guides and apparatus for operating the gates, extending to the top of the cylinder, as shown in the accompanying drawings. The iron cylinder shall be sunk seventy-eight feet below the ordinary water surface, and it shall be

lined with a single thickness of well-burned brick (four inches), laid in cement mortar, like that for the masonry in the land shaft.

The joints of the cylinder shall be made with red lead, and the spaces between the flanges shall be thoroughly filled with pure cement, well rammed in.

At the bottom of the vertical shaft there shall be a sump of equal diameter with the shaft, six feet in depth, measuring from the bottom of the horizontal gallery hereafter described, and lined with the same thickness and quality of brickwork as the vertical shaft.

The contractor shall be required to provide an air-lock, which he shall keep constantly ready to bolt on the top of the cylinder while sinking it, and he shall have air-pumps and all other necessary machinery and apparatus in readiness at all times to fill the cylinder with compressed air in case any soft material is encountered, or the pneumatic process be rendered necessary from any other circumstance that may arise. And to anticipate any sudden yielding of the material within the cylinder from the exterior pressure, in time to prevent it, he shall constantly drive a rod six feet in advance of the excavation, to detect the presence of any soft or treacherous material. While sinking the cylinder, the contractor will not be permitted to excavate more than six inches in advance of the bottom of the iron cylinder, unless to remove a stone or other obstacle in the way of sinking.

GATES AND THEIR GUIDES.

There shall be three gates of cast-iron, of the same quality as the vertical shaft, rectangular in form, and forty-two inches wide by fifty-nine inches high.

Their general thickness shall be one and one-half inches, and they shall each be strengthened by three vertical and three horizontal ribs, as shown in the accompanying drawings. Their bearing surfaces shall be lined with plates of brass one-half an inch in thickness, secured to the gates by brass screws three-eighths of an inch in diameter, placed three inches from centre to centre. The heads of these screws shall be countersunk, and the bearing surface truly faced.

Each gate shall be hung upon a two-inch wrought-iron rod, finished at the top with a screw with flat thread, five feet six inches in length. This screw shall pass through a nut near the top of the cylinder, which nut can be operated by a wrench or hand-screw, all arranged as shown in the drawings.

The guides shall be ten feet in length and of a uniform thickness of one and one-half inches, strengthened by ribs as shown in the drawings. They shall be united to the cylinder by fifty bolts three-fourths of an inch in diameter to each gate. The surfaces of the guides which take the bearings of the gates shall be lined with brass of same thickness as that of the gates, and similarly put on. The remaining surfaces of contact of the gates and guides

shall be truly faced. The joints between the guides and the cylinder shall be packed with lead and thoroughly caulked.

HORIZONTAL GALLERY.

A horizontal cylindrical gallery of the same form, size, material and workmanship as the main tunnel, shall start from the vertical shaft, its axis being sixty-six feet five inches below the ordinary water surface.

The opening in the vertical shaft through which this gallery will pass will be made in the second section from the bottom.

This gallery shall run horizontally and in a direction perpendicular to that of the present tunnel, to a point fifty-seven feet from its axis. It shall be lined with brickwork of the same quality as that of the land shaft, and eleven inches in thickness.

At a point fifty-seven feet from the axis of the present tunnel, this gallery will be crossed at right angles by the main tunnel. The connection between the horizontal gallery and main tunnel will be as shown in the drawings.

The main tunnel is to be extended to the eastward to a distance of sixty-five feet from the point of intersection of the axis of the horizontal gallery and main tunnel, where it will be terminated by a hemispherical shell of brickwork twelve inches in thickness.

Fifty feet from this point of intersection, and to the eastward, a circular opening seven feet in diameter (interior) shall be groined into the main tunnel. This circular opening is for the entrance of a horizontal gallery, of the same form and dimensions as the main tunnel, which shall be started in a direction to be fixed by the said Board of Public Works, and carried to a distance of fifteen feet from the axis of the main tunnel, where it shall be closed by a hemispherical shell of brickwork twelve inches in thickness, as shown in the drawings. All this work to be of the same quality as that of the main tunnel.

BULK-HEAD.

Ten feet from the axis of the horizontal gallery to the eastward there shall be a bulk-head or valve for closing the main tunnel.

This bulk-head shall be two and one-fourth inches in thickness, strengthened by four radial and one circular rib, the radial ribs being two inches in thickness and projecting from the plane of the bulk-head eight inches at the centre; the circular rib, two inches in thickness, projecting six inches from the same plane.

This bulk-head shall be cast in quadrants, and united by flanges and bolts as shown in the drawings.

The joints between these quadrants and the bearing surface of the bulk-head upon its ring or seat, hereafter described, shall be truly faced, and the parts of the bulk-head shall be united by eight one-and-three-quarter-inch

bolts. A space is provided and shown in the drawings around the circumference of the bulk-head, which shall be filled with lead and caulked.

The ring or bearing-plate of the bulk-head is nine feet two inches in outside diameter; its inside vertical diameter being seven feet two inches, and inside horizontal diameter seven feet. Its uniform thickness is three inches, and it shall be strengthened by a circular rib three inches in thickness, and projecting five inches from the surface of the ring. It is cast in four equal parts, united by flanges with eight one-and-one-fourth-inch bolts, two at each joint. The flanges of this ring are three inches thick and seven and one-fourth inches wide.

The bearing surface for the bulk-head, one and one-half inches wide, shall be accurately faced.

This ring shall be built into the masonry, as shown in the drawings, and secured by eight one and three-quarter inch anchor bolts of varying lengths, as shown by the drawings, and as the Board of Public Works may direct. The brick work of the tunnel shall be reinforced, as shown in the drawings, to make a secure bearing for the ring.

THE TUNNEL PROPER.

The clear width of the tunnel is to be seven feet, and the clear height seven feet and two inches, the top and bottom arches to be semi-circles. The tunnel is to be lined with brick masonry eleven inches thick, in three rings or shells, the bricks to be laid lengthwise of the tunnel with toothing joints. The two inner rings to be laid edgewise, and the outer to be laid flatwise.

The character of the masonry, including the bricks, cement, mortar and workmanship to be equal to that required for the land shaft.

The excavation for the tunnel when through sufficiently firm clay, shall conform exactly to the outside of the masonry. Sections of not over thirty inches of the upper arch are to be built at a time.

All spaces left between the outside of the regular brickwork and the excavation must be filled up solid with masonry, but no allowance will be made for such extra work when caused by the mistakes or carelessness of the contractor or his men.

All timber, lumber, or other materials, necessary for bracing and supporting the sides of the tunnel, previous to the completion of the masonry, must be furnished and put in place by the contractor.

The ground through which the main tunnel is to be made is believed to be firm clay, because that through which the present Lake Tunnel was made, and which is within sixty feet all the way, was firm clay. The contractor, however, must take the work at his own risk, and be provided at all times with such means as said Board shall approve, to guard against danger or damage in the prosecution of the work.

The contractor will not be allowed to excavate even in good ground more

than six feet beyond the masonry of the upper arch without bracing and supports for the clay, satisfactory to the said Board. In soft or dangerous ground the contractor will be allowed to excavate only so far in advance of the masonry as said Board shall consider safe.

SPECIAL AND GENERAL REQUIREMENTS.

The contractor must remove all excavated material taken out of the Lake shaft to such points as shall be designated by the Board of Public Works, *provided* said points shall not exceed three hundred feet from the crib, and must provide all necessary tug-boats, scows, and other means of transportation, and implements required for such removal. All material taken out of the Land shaft must be deposited at such points as the Board of Public Works shall designate, *provided*, said points shall not be more than five hundred feet distant.

All materials of whatever kind, to be used in the work, are to be inspected by the Board of Public Works; and all unsuitable materials are to be immediately removed by the contractor.

The contractor shall discharge from his employment, when directed by the Board of Public Works, all unfaithful and incompetent workmen.

The Board of Public Works must be permitted to remove such portions of the work as they may, from time to time, think necessary for the discovery of improper materials or workmanship; and the contractor shall restore such work at his own expense, in case it shall have been done improperly; and at the expense of the City of Chicago if done in a proper manner.

The contractor shall furnish all the pumping, transporting, ventilating, hoisting, and other machinery and apparatus, all the tools, all the materials, and whatever else may be needed, and do all the work of whatsoever nature, necessary to complete the tunnel, shafts and connections required in these specifications.

The contractor shall keep as pure air as possible in the tunnel at all times, and shall furnish men and stakes sufficient to enable the engineer of said Board to give the necessary lines and levels to construct the work by, without charge for them, or for any necessary delay of the work while giving lines or levels.

The contractor must deliver to the Board of Public works, on or before the first day of each month, a written statement of the amount of claims, if any, for extra work done, and extra materials furnished, during the previous month, otherwise claims for extras during that month will be forfeited.

The contractor will be required to keep the work in perfect repair for twelve months after the same shall have been faithfully completed to the satisfaction of the Board of Public Works.

Monthly estimates will be made by the Board of Public Works, of the value of work actually done and in its permanent place; and on or about the

sixth day of each month, eighty-five per cent. of the estimated value of the work done the previous month will be paid the contractor; the remaining fifteen per cent. being reserved as security for the faithful completion of the whole work.

The contractor will be allowed to use so much of the said crib as may be necessary to carry on the operations of the work, and to accommodate the men. Nothing in this privilege is to prevent the said Board from building a stone structure on the present crib, from low water up; *provided*, that operations of this kind shall not extend over more than one-quarter of the crib at a time; and *provided*, that the light-house keeper employed by the said Board shall always have a space on the first floor to live in, not more than one-tenth the surface of the crib.

The contractor shall keep in neat and proper order a sufficient number of earth closets to accommodate his entire force on the crib, and shall permit no garbage, excrements or offal of any kind whatever to be thrown into the lake within one mile of the crib. The contractor shall immediately discharge any person in his employ who shall be known to commit a nuisance on or near the crib.

The whole of the work included in these specifications, is to be under the immediate charge of such Engineer or Superintendent, aided by such assistants and Inspectors as the Board of Public Works may from time to time appoint for the purpose, and all directions of said Engineer or Superintendent must be obeyed by the contractor, unless said Board shall countermand them.

The contractor will be required to guard the public effectually from liability to accident in consequence of his operations, during the whole progress of the work, both by night and by day; and will be held responsible for any damages the City may have to pay in consequence of neglect on the part of the contractor to protect the public against injury.

The said Board of Public Works hereby reserve the right to make any changes in the foregoing plans and specifications that the said Board may deem desirable or necessary. And the contractor shall furnish any additional materials and do any additional work required by such changes, at the rates enumerated in his proposal. And in case a less amount of materials or work should be required, in consequence of such changes, he shall deduct from his contract price for such saving of materials or work at the rates enumerated therefor.

The whole of the work included in these specifications, to be commenced and carried on at such times and places as said Board shall direct and to be completed.

The said Board of Public Works reserve the right to furnish the bricks for said tunnel and connections, in which case the contractor will do all the work herein specified, except furnishing the bricks, at the rates enumerated in

the second column of prices, it being understood that the bricks are to be delivered at some accessible point within two hundred and fifty yards of the land shaft for the west end of the tunnel, and on some convenient dock east of Rush street for the east end of the tunnel.

PROPOSAL.

We hereby propose to do all the work, including the furnishing of all materials and machinery, and doing whatever else may be necessary to complete the new Lake Tunnel, and all connecting works, for the City of Chicago, according to the foregoing Plans and Specifications, and to the satisfaction of the Board of Public Works of said City, at the following rates, viz:

	Including Bricks.	Without Bricks.
Main Tunnel and Galleries, per lineal foot,	\$29.50	
Land Shaft and Sump, per lineal foot,	50.00	
Lake Shaft and Sump, per lineal foot,	253.00	
Three Gates and Fixtures, and Bulk-head at Lake Shaft,	4,500.00	

PRICES OF WORK AND MATERIALS ADDED.

Excavation per cubic yard,	3.00
Brick Work, per cubic yard laid,	12.00
Timber, per thousand, (B. M.,) framed and in place,	35.00
Cast Iron, per pound, in the work,	10
Wrought Iron, per pound, in the work,	12½
Brass, per pound, in the work,	35

PRICES TO BE DEDUCTED FOR WORK, AND MATERIALS SAVED.

Excavation, per cubic yard,	2.50
Brick Work, per cubic yard, laid,	10.50
Timber, per thousand, (B. M.,) framed, and in the work,	25.00
Cast Iron, per pound, in the work,	08
Wrought Iron, per pound, in the work,	10
Brass, per pound, in the work,	30
Three Gates and Fixtures, and Bulk-head at Lake Shaft,	4,000.00

JAMES STEEL.

JOHN E. McMAHON.

WHEREAS, On the 4th day of May, A.D. 1872, a certain contract was made and entered into by and between the City of Chicago, of the one part, and the firm of Steel & McMahon, composed of James Steel and John E. McMahon, of the other part, for the construction of a tunnel from the Crib in the lake to the Chicago Water Works on the lake shore; and WHEREAS, The time for the completion of said contract has, by agreement between the City of Chicago and said Steel & McMahon, been extended till the first day of July, A.D. 1874; and WHEREAS, George Steel, J. McArthur, John Alston and S. McKichan have signed their names as sureties upon the bond given by said Steel & McMahon for the faithful performance of said work,

Now, therefore, the said Steel & McMahon, and each of them, hereby consent to said extension, and that the said agreement as it now stands shall be binding upon, and is hereby ratified by, each of them; and the said George Steel, J. McArthur, John Alston and S. McKichan, sureties upon said bond, hereby consent to said extension. And they and each of them agree to be bound upon said bond signed by them, the same as though it were signed and executed after said extension; and they and each of them hereby consent to said extension, and that their said bond shall stand for the faithful performance of said contract as it now is.

In Witness Whereof, We have hereunto set our hands and seals this 27th day of June, A.D. 1872.

JAMES STEEL,	[SEAL.]
JOHN E. MCMAHON,	[SEAL.]
GEORGE STEEL,	[SEAL.]
J. MCARTHUR,	[SEAL.]
JOHN ALSTON.	[SEAL.]

UNIV. OF MICHIGAN,

FEB 23 1912

